Task 53

Final Product

ESSEX COUNTY

COMPREHENSIVE PLAN

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INTRODUCTION AND FRAMEWORK

FOR PLANNING

Background Description

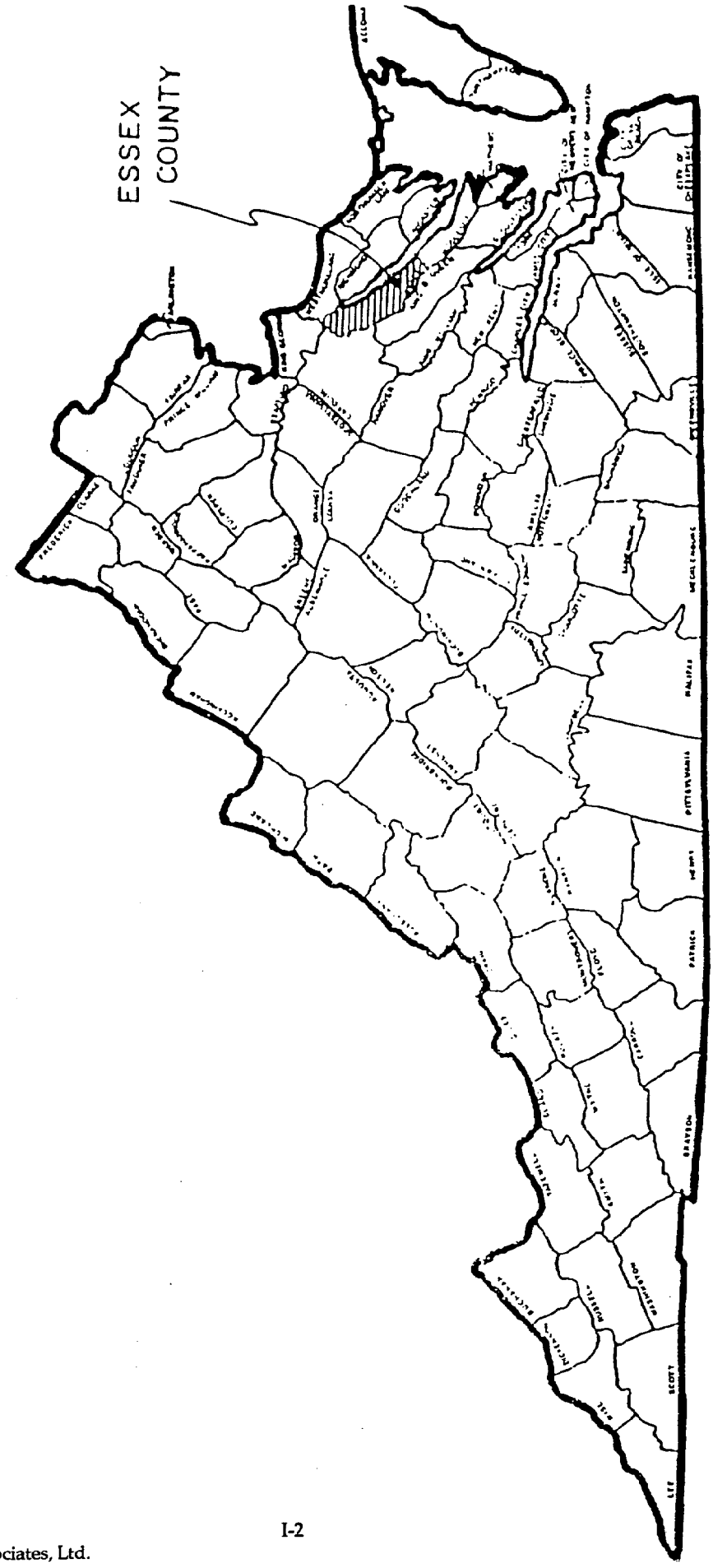
Essex County is a predominantly rural County situated on the Middle Peninsula of Virginia. It is bounded on the north by King George and Westmoreland Counties, on the east by Richmond County, south by Middlesex County, and by Caroline and King and Queen Counties on the west. The northeast boundary of Essex County is the Rappahannock River (See Map 1). The land area of the County is approximately 261 square miles (167,200 acres).

Formed in 1692 when Old Rappahannock County was divided into Essex and Richmond, the County was named for either the English County or the Earl of Essex. In 1652, a port settlement began in the area of New Plymouth, later renamed Tappahannock for the Indian name meaning Town on the River. Tappahannock was incorporated in 1926 and serves as the County seat covering an area of roughly 2.75 square miles and located near the center of the County.

An elected Board of Supervisors and an appointed County Administrator govern the County and a Town Council-Town Manager form of government serves the Town.

The manufacturing and trade sectors of Tappahannock are growing and providing an increasing number of jobs locally, reducing the rate of out-commuting. Tappahannock is both the employment and population center for the County. Other residential developments exist as small rural communities along the Rappahannock River or as strip residential along primary roadways. Throughout most of the County's past, growth has been gradual and slow and the County has remained predominantly rural in character. As the County grows and changes over the next 20 years, this Comprehensive Plan will serve as a guide for making public and private decisions regarding the character of Essex's growth and development. The Plan is a culmination of a cooperative effort, pulling together the knowledge and skills of diverse citizens and staff. This plan represents a future vision of Essex County in 2010 along with recommendations for bringing that vision to fruition. The ideas of the Plan are a distillation of the community's many desires, tempered by what seems necessary, feasible, and reasonable. This Plan is not intended to be a static document. It should be reviewed and updated periodically to reflect new development trends, shifts in the economy, or changes in the community goals and objectives.

Essex County is a special place with a unique character, culture and history that distinguishes the community from thousands of counties across America. This Comprehensive Plan, particularly the plan goals and objectives address the preservation



MAP 1

and enhancement of these special qualities and that distinctive personality felt by the citizens who live and work here. This sense of uniqueness and pride of place are the guiding forces and strongest motivation for those who have contributed to the realization of this document.

The Comprehensive Plan Defined

The Comprehensive Plan is an official public document adopted by the County Planning Commission and Board of Supervisors. The Plan is a general, long-range, policy and implementation guide for decisions concerning the overall growth and development of the County.

The Plan is comprehensive because the elements cover the entire range of development and preservation issues which can be influenced significantly by the County Board of Supervisors and other governing authorities and agencies. The Plan is general because the recommendations are broad. The Plan is long-range because consideration is given to the problems and opportunities which may arise over the next twenty years. The Plan is dynamic because there can be amendments to adapt to new situations and meet new challenges. Planning should be viewed as an opportunity for a community to control its own destiny. It is a process by which Essex County has:

- assessed its current state of development, needs, problems, and resources;
- determined its desirable future physical form and character;
- established public policies designed to help bring about the necessary public activities and guide private actions to achieve community objectives

The purpose of such a process is to ensure rational allocation of scarce resources to meet the community's priority needs and to avoid future environmental, social, and economic problems and crises.

In too many cases, communities fail to establish a proper relationship between planning efforts and regulatory processes. Planning should be a means for expressing the will of the community; regulatory actions the means by which the community's will is implemented. In other words, regulations are not ends in themselves, but means of achieving the desired ends identified during the planning process.

The Comprehensive Plan has evolved as the primary vehicle through which this process is conducted. The Plan generally consists of:

- an analysis of existing conditions and an inventory of available resources;
- goals and objectives;

- future plans; and
- recommendations for implementation

In order to be effective, the plan must contain inputs from all segments of the community and must be continuously evaluated and updated as necessary.

It has been prepared by the Essex County Planning Commission at the direction of the Board of Supervisors based upon the needs and desires of the citizens of Essex County.

Although adopted as an official public document, the Comprehensive Plan is not a development and preservation ordinance. This plan serves as a catalyst and guide to the establishment of, or revisions to, other ordinances or planning tools including the zoning and subdivision ordinances. The Land Use Plan Map, included in this plan, serves to illustrate how and where the Plan's policies and recommendations will be carried out. This mapped information is general in nature and not appropriate for determining the suitability of specific sites for any specific use.

The overall goal of the Comprehensive Plan is to: "Maintain and enhance the quality and rural character of Essex's natural and man-made environments by promoting the efficient use and conservation for the County's land and natural resources in order to effectively meet the social and economic needs of present and future citizens."

The Purpose of the Plan

This Plan provides the basic policy framework to manage and direct future development in Essex County. It is designed to deal with problems which are immediate in nature as well as to provide the planning for longer range actions and policies. As such, the Plan is designed to address the County's needs through the year 2010 and thereby provide the County with a means to ensure orderly, managed growth and development throughout the planning period. Various projections, policies, and recommendations have been prepared in the context of balancing the many objectives attendant to this Plan. The general thrust or "theme" of the objectives it that the County should endeavor to preserve the present "character" of the County and enhance the quality of life for its citizens while maintaining a pace of growth and development which is managed. This general theme when interpreted in terms of land use says that:

In general, the County should adopt a "managed growth" philosophy toward the use of the land over which it has zoned authority; and that development should be of a controlled nature, channeled into the most appropriate areas and discouraged in other areas.

Moreover, the County has determined that such a philosophy is necessary to cost effectively sustain adequate levels of public services and facilities in the form of schools, transportation networks, sewer, water, police, fire and health care services which will be required to support present and future residents.

This theme, together with objectives more specifically framed in subsequent elements of this Plan, serves as formally adopted policies regarding Essex County's future. They provide guidance for public decisions concerning how development will be managed or regulated, where and how it should occur, and where capital improvements and public services should be provided or not provided to support it. In this context, the Plan serves to inform County residents, the development community, and State and Federal agencies of the County's intent regarding its future. It identifies controls, management measures, financial or human resource investments, and incentives necessary to achieve County objectives.

Finally, the Plan provides the basis for a number of County actions and management decisions and serves as a "yardstick" for evaluating the merits of proposals which will surface over time. While it is impossible to anticipate all possible future occurrences, problems or opportunities which will arise, undoubtedly County residents, the Planning Commission and the County Board of Supervisors will be faced with proposals which could affect many aspects of life in the County. This Plan, and in particular its policies and objectives, should provide guidance in decision-making and establish a basis for evaluating proposals of this kind.

Legal Basis for Comprehensive Planning

The preparation of a Comprehensive Plan is the legal responsibility of the County Planning Commission under Virginia Planning Enabling Legislation, Title 15.1, Article 4, of the Code of Virginia, 1950, as amended. (See Appendix A). The Plan also serves to satisfy the requirements of Section 5.6A of VR 173-02-01 Chesapeake Bay Preservation Area Designation and Management Regulations, which established standards for local Comprehensive Plan Elements designed to implement Chesapeake Bay Water Quality Improvement objectives. Any ordinance pertaining to the use of land or the growth and development of the County should conform to the goals, objectives, and policies as they are presented in this Plan.

Past Comprehensive Planning Efforts

Essex County formed its first planning commission in 1967. Over the years the commission has studied numerous facets of life in Essex County and has served in an advisory capacity to the Board of Supervisors in land use and public facilities planning efforts.

In 1972 the Essex County Board of Supervisors moved to join the Middle Peninsula Planning District Commission (MPPDC) with the other five counties of the Middle Peninsula. Since that time the County Planning Commission has continually received information and professional assistance from MPPDC in their planning efforts. As of 1978 the commission had attempted to provide direction to County development through land use tools including mobile home, subdivision and zoning ordinances. Economic and community development plans have also evolved. In the spring of 1983, Essex County's

Planning Commission began a review and update of the data base included in their 1978 Comprehensive Plan and in July of 1984 adopted the "Essex County Comprehensive Plan". Periodic review and revision of the plan is intended to ensure that the goals and objectives of the plan fit the changing needs and conditions of Essex County.

This document represents a substantial review and revision of the County 1983/84 Comprehensive Plan. It builds on the foundation for planning established in the 1978 Comprehensive Plan and subsequent revisions in 1983.

Perhaps a most noteworthy product of this effort has been refinement of the County's vision for a future planned pattern of land use that is responsive to the County's interest in maintaining rural character and qualities. As such it recommends refinement of the County's zoning structure designed to channel most of the expected future development into serviceable form.

Process for Plan Development

Preparation of this Comprehensive Plan began early in 1991 with the hiring of the planning consulting firm of Redman/Johnston Associates, Ltd. The County Board of Supervisors charged the Essex County Planning Commission to work with the consultants and County staff to redefine County objectives and to ascertain changes needed in the County Planning Program to achieve these objectives. A survey distributed to County residents in October 1989 provided substantial insight concerning the interests and attitudes of residents regarding many planning issues. Residents noted an interest and perceived need for transportation and public recreation facilities improvement. Because survey responses covered a broad range of issues it has been included in this Plan. (See Appendix B).

Between February and June the Planning Commission worked with the consultants and County staff to identify and discuss important planning issues and background information relevant to the Comprehensive Plan. A Comprehensive Plan "Issue Paper" was prepared and discussed.

The "Issue Paper" contained important background information relating to recent development trends in the County. It also established a series of land use planning objectives and arrayed alternative implementation recommendations geared toward solutions to identified issues and concerns. The Planning Commission evaluated specific implementation approaches and selected those which were best matched to County needs and objectives.

The Planning Commission also conducted a workshop to develop a set of draft goals and objectives for the Plan which were compatible with selected implementation recommendations. This workshop together with several meetings of the Planning Commission and a public forum to solicit citizen comments on a draft plan update formed the basis for preparation of this Plan.

Components of the County Planning Program

This Comprehensive Plan provides the basic framework and direction for all components of what may be considered the County's overall Comprehensive Planning Program. Its objectives, policies, and recommendation have been influenced by reports prepared as part of the process toward its completion. Likewise, it has or will, in turn, influence revisions in the construction of companion documents which serve to implement the Plan including the County Zoning Ordinance and Land Subdivision Regulations. Since the Plan concurrently influences and is influenced by these related Planning Program documents, a brief description of each follows.

Zoning Ordinance

A primary planning tool for implementing the Comprehensive Plan is the Zoning Ordinance. Zoning is a means by which private properties are regulated in the public interest. The Zoning Ordinance and its official map delineate and describe conservation, agriculture, residential, business and industrial areas throughout the County. The permitted uses and development regulations for each of these areas are described within the ordinance and through a schedule of district regulations and an official zoning map.

Adopted in October 1976, Essex County has utilized zoning to direct development for 15 years. An effort to preserve desirable characteristics, the ordinance also provides for managing the costs of development based upon future services needs. Recent creation of an overlay zone in the ordinance serves to implement requirements of the Chesapeake Bay Preservation Act. As a result of information and policies included in this Comprehensive Plan, revisions of the current zoning ordinance have been made to achieve consistency between the Comprehensive Plan and County Zoning Ordinance.

The County Zoning Ordinance will continue to be the chief (though not exclusive) means through which this Plan is to be implemented. The revised Zoning Ordinance prescribes ways in which lands located within the County may or may not be used. It will prescribe a series of zoning districts and, for each district, enumerate uses permitted and establish performance standards for future development in each. The standards are designed to ensure achievement of certain objectives established in the Plan including protection of sensitive environmental features, protection of productive farmland, and enhancement of future built environmental qualities.

Finally, the ordinance establishes additional design standards and site planning standards for certain uses to require control of access to certain County roads, and prescribe minimum landscaping requirements to enhance the established form and pattern of development in the County which will continue to evolve over time.

Subdivision Regulations

Revised in 1977, Essex County has enforced subdivision regulations for many years. Subdivision regulations assure adequate provision of services for residential communities. By use of this planning tool, unnecessary burden of public funds for streets, recreation and utilities is avoided in the future.

These regulations will continue to provide guidance and controls for the configuration and layout of land subdivision in the County. They will further establish standards for subdivision plat content and procedural submission requirements.

Standards contained in these Regulations will also be designed to ensure implementation of certain Comprehensive Plan policies and objectives.

Site Plan Regulations

Another tool to implement the Comprehensive Plan is the establishment of site plan requirements which provide for the review of proposed developments of a designated scale prior to their location within the County. In this way the provision of public services, impact on adjacent land uses and overall impact can be negotiated with the developer prior to approval by the County. Such provisions should be added to the Zoning Ordinance to assure the prospective impacts of site development for certain development projects in the future are carefully monitored and assessed to minimize negative consequences to the County.

The Chesapeake Bay Preservation Act

Adoption of the Virginia Chesapeake Bay Preservation Act in 1988 has prompted many of the revisions incorporated in this update for the County Comprehensive Plan and will prompt changes to County Implementation Ordinances and Regulations. The Act has required local governments (including Essex County) to amend their land use plan and ordinances to meet performance criteria for the protection of the Bay and its tributaries.

Erosion and Sediment Control

Essex County has adopted an Erosion and Sedimentation Control Ordinance. Through this ordinance, those developments and other activities which disturb the earth are reviewed and monitored so as to assure that sedimentation is minimized and erosion is prevented when land disturbing activities occur. This serves to control development only to the extent that compliance with environmental protection factors must be met.

Housing and Building Codes

Housing and building codes include the fire code, electrical code, housing code, building code and plumbing code. These are designed to protect the health, safety and general welfare of the residents of the County by providing minimum standards for all types of structures. Most of these codes have been incorporated into the Uniform Statewide Building Code and are in effect through the Office of the Building Inspector. The County may wish to consider adoption of a Housing Code in the future as staff resources become available to permit its administration. A Housing Code would provide for the inspection and regulation of existing structures to ensure safe and sanitary conditions in housing throughout the County.

Historic Easement & Agricultural and Forestral Districts

The provisions of Virginia law permit County ordinances to include protection against destruction of or encroachment upon historic areas. This can be included within the zoning ordinance or it can exist independently in the form of historic easements. The historic easement is a means for private owners of historic properties to preserve these properties for public enjoyment without giving up their ownership. The easement includes a dedication of restrictions on future use and development of the property and places it in trust with a public or semi-public agency. The property owner, however, retains the right of continued ownership and usage as long as uses are consistent with the restrictions. There is also a provision for tax deductions. The County may wish to encourage owners of historic properties to consider their options in preserving identified historic sites and structures in the County. Similar State statutes permit a landowners voluntary formation of agricultural and forestral district. Encouraging landowners to create such districts further the comprehensive objectives for preserving farmland, forestland and rural character.

Other Governmental and Financial Assistance Programs

There are numerous programs through both the State and Federal governments which are available to Essex County. Funding sources change periodically, some are eliminated and others expanded. The extent to which funds are allocated to any area is limited.

In the area of housing, programs are available to improve housing conditions for minorities, the poor, the elderly and those in areas where conditions may constitute a health hazard. Rural areas are eligible for funds through the U.S. Department of Agriculture Farmers Home Administration. Housing Assistance programs for low and moderate income families for the repair and rehabilitation as well as construction of new homes are available through several programs of the Farmers Home Administration.

The U.S. Department of Housing and Urban Development offers one hundred percent grants to localities in the form of Community Development Block Grants. These grants

can be used for a variety of community development projects dealing with the maintenance and expansion of the quantity and quality of housing but competition for such grants is keen.

The Department of Outdoor Recreation is also a source of assistance in acquiring and developing sites for parks and recreational uses. Public utility systems may also be funded in part through the Farmers Home Administration or the State Water Control Board.

The County should explore all possibilities in state and federal loan and funding sources in order to improve deficient housing conditions, provide necessary public utilities, provide public recreation and open space sites and assist in the deliverance of public services.

Capital Improvements Program

A capital improvements program lists the local public improvements needed, based upon the Comprehensive Plan, for a specified period. It identifies the estimated construction costs and the proposed funding source as well as the timetable under which such projects will be implemented.

Essex County has no Capital Improvements Program at the present time. A capital improvements program serves to assist the County in carrying out the goals and objectives within the limits of the County's financial capabilities, and to assure adequate funding for capital improvements needed to facilitate delivery of services to County residents. In the future the County will need to develop a capital improvements program as a tool to assist the accomplishment of planning objectives.

PART II.

BACKGROUND FOR PLANNING

ENVIRONMENTAL CHARACTERISTICS AND NATURAL RESOURCES

The impacts of future growth and development on environmental quality in Essex is an issue of increasing public concern. The effects of increased population and physical development manifest themselves on the natural environment in many ways, including: clearing of trees and natural vegetation; loss of plant and wildlife habitat; loss of valuable wetlands and aquatic habitat; lower groundwater levels; groundwater contamination and saltwater intrusion; degradation of surface water quality in streams and rivers; disruption of natural water drainage systems; air pollution; increased amounts of solid wastes, and loss of scenic natural views.

Environmental deterioration is not an inevitable consequence of population growth. The development of new homes, businesses, industries, schools, and roads necessary to accommodate a growing population can occur without unduly threatening the County's environmental quality if steps are taken to ensure new development is designed and built in an environmentally sensitive manner. Certain areas of Essex are much more susceptible to environmental degradation than others due to the presence of sensitive natural features. Future development should be directed away from sensitive areas and guided to areas of the County where environmental impacts will be less severe. Regardless of location, all future development should meet minimum performance standards for environmental protection.

Description of Natural Features & Environmental Quality Issues

Soil qualities, topography, the presence of wetlands, floodplains and tidal shorefront characteristics of Essex County influence development and can be adversely affected by land disturbances brought on by development activity. An understanding of these natural resources and their limitations will assist in determining overall land use suitability as well as provide an indication of how and why such resources should be protected to maintain County environmental quality. The following sections identify those natural features considered significant in the County as a basis for determining how they influence and can in turn be influenced by development.

Climate

Essex County is located in the temperate climatic zone near the mean path of winter storm tracks. The average annual temperature is 56.6 degrees, Fahrenheit, averaging 77 degrees Fahrenheit in July and 35 degrees Fahrenheit in January. Average annual rainfall is slightly less than surrounding areas at 40 inches.

Groundwater

The groundwater serving Essex County occurs in three major aquifer systems. Uppermost is the water table aquifer which is a reliable source of domestic water supply. However, seasonal fluctuations and lack of storage means makes it impractical for industrial or municipal uses. This water source occurs 50 to 140 feet below surface and may be highly mineralized in some locations.

Occurring 150 to 200 feet below surface is the upper artisan aquifer system. It occurs consistently, making it a reliable source of individual domestic and subdivision groundwater supply. This system is currently providing water to light and moderate water users throughout Essex County for individual industrial and agricultural purposes and is of good quality.

Of great potential is the principal artisan aquifer system occurring 200 to 400 feet below surface in Essex County. Although deeper and more costly to access, this aquifer remains a future possibility for water supply.

Adequate groundwater supplies exist in good quality for Essex County for the present and foreseeable future.

Surface Water Quality

Water serves as a major attraction to tourists, residents and potential residents of Essex County. The entire eastern coast of the County is the Rappahannock River and several major inlets also attract development and are enjoyed for water sports. Swimming, boating, fishing, shellfishing and other water-oriented activities are dependent upon the maintenance of high standards of water quality.

Shellfishing requires that certain standards be maintained. Water quality is affected by run-off from agricultural and paved areas, sewage treatment discharge, leaching of septic tank effluent and shoreline activity during construction. It is important to consider the impacts which various land uses will have upon waterways and identify potential environmental problems and solutions.

Exhibit 6 of the 1984 Comprehensive Plan identified several areas presently condemned by the Virginia Department of Health Bureau of Shellfish Sanitation. In spite of Bay protection efforts, conditions remain essentially the same today. Commercial shellfishing is prohibited in these areas due to the quality of the water as tested periodically. The boundaries of the condemned area include all of the Rappahannock River and its upstream tributaries from Lowery Point. Although local development in and around Tappahannock and marina activity contribute to water pollution, the major factor contributing to condemnation presently is industrial activity on the Rappahannock River above Essex County which affects water quality for some distance before dissipating.

Depending on the size of the water resource and the location of nearby potential pollutants,

all surface waters are susceptible to potentially harmful effects of development. These may include: leachate from landfills; solids or suspended sediment from sand and gravel washing operations; bacterial contamination from failing septic systems and sewage treatment plants; runoff from agricultural fields and impervious surfaces; untreated sewage from boats and marinas; leaking industrial storage and containment facilities; dredging operation; and leachate from dredge spoils sites.

The Rappahannock River has been over-enriched with biological nutrients such as phosphorous and nitrogen attributable to many of these causes. In tidal waters these nutrients are not flushed downstream as quickly as in nontidal waters. When these nutrients are oversupplied, algal blooms result which cause unpleasant tastes and odors in the water. Water turbidity reduces the availability of light to bottom growing submerged aquatic vegetation which is an important food source for wildlife and waterfowl. In addition, when the algae die and decay, additional dissolved oxygen is needed, placing the continued health and survival of fish and shellfish inhabiting these waters in jeopardy.

The Virginia Division of Soil and Water Conservation (VDSWC) recommends control of non-point sources of nutrients by best management practices for agriculture such as; maintaining vegetated buffers or filter strips along rivers and tributaries, using grass swales for drainage in agricultural fields, containing animal wastes, and limiting fertilizer applications. The VDSWC also administers the Erosion and Sediment Control Laws, which are enforced by local ordinances.

Shoreline Condition

The fastland of Essex County ranges from low shore to high shore with bluff, with several areas of artificial fill. Although eighty-nine percent of the shoreline is low or moderately low shore (sometimes with bluffs), flooding is not usually a problem.

Tidal marshes, including fringe, embayed and extensive marshes, comprise eighty-four percent of the County's shoreline. The Virginia Wetlands Act of 1972 controls any proposed alterations to these areas, as marshes, especially embayed and extensive marshes, serve vital ecological functions, serve to filter nutrients in runoff and have valuable flood and erosion protection qualities. As non-renewable resources, marshes should be preserved.

Eleven percent of the shoreline is comprised of beaches. Though there are several nice beaches fronting private residences, most areas have thin, strip beaches, often with vegetation. No public beach areas presently exist.

East of Tappahannock, eighteen percent of the shorelands are developed for residential purposes, as compared with only two percent of the shorelands to the west. Over eighty-eight percent of the shorelands east of Tappahannock are still agricultural or wooded, while roughly ninety-seven percent of the shorelands to the west are agricultural or wooded. Another statistic showing the greater development in the eastern section of

the County riverfront is the amount of artificial stabilization. Thirteen percent of the shoreline east of Tappahannock is artificially stabilized, as compared with only one percent west of Tappahannock.

Shoreline Erosion

Shoreline retreat in Essex County is dependent upon several factors, combinations of which control the rate of erosion or accretion in a given area at a given time. There are three basic causes of erosion which can affect a river system such as the Rappahannock River. A prevalent cause of shoreline retreat is downhill rain runoff. This is a basic weathering of the shoreline due to rain waters. Rain runoff erosion mainly affects bluffs, especially wooded bluffs, as it undermines the tree system along the shore. Continued washing away of the soil causes the trees to eventually fall, carrying with them large amounts of soil suspended in the root systems.

Traditionally, several agricultural areas have been plowed perpendicularly to the shoreline. Such plowing encourages rain runoff erosion and is a prime contributor to not-point source pollution. The sediments suspended in the rain runoff contain large amounts of fertilizers and pesticides which contribute to seasonal water quality problems. Runoff erosion and the ensuing pollution from agricultural areas can and is increasingly being eliminated with better farming practices which have evolved as a result of concern for bay water quality and the efforts of the U.S. Soil Conservation Service to develop Soil and Water Conservation Plans in conjunction with farm landowners.

The primary cause of erosion along the County riverfront is wave action generated by local winds. The height and growth of waves is controlled by four factors: the overwater distance across which the wind blows (the fetch), the velocity of the wind, the duration of time that the wind blows, and the depth of the water. The width of the water body is also important in describing erosion patterns for a given area. Wave action is responsible for most erosion along the County's shoreline from Beverly Marsh east toward the river mouth. The longest fetches and usually the most powerful wind generated waves are from the southeast, north, and the northwest along this section of the County's shoreline. (However, winds from the southeast are generally very light. Those from the south are very powerful and thus can cause much erosion even without a large fetch). Winds approaching from any of these directions can cause much shoreline retreat along affected areas. (The 100-year average erosion rate for much of this section of the shoreline is 1.5 to 2.5 feet per year, with several areas having rates of from 3 to 4 feet per year). Approximately 7.4 miles of the shoreline have been artificially stabilized. However, erosion is continuing in unprotected areas.

Most of the erosion and accretion found along the upper Rappahannock River (above Beverly Marsh) occurs at the bends in the river. The river current is fastest on the outside of the meanders and is much less on the inside. As a result, the outside bends erode while the inside bends accrete. The amount and rate of erosion depends upon both the composition of the land in the bends and the speed of the current there.

Beaches and marshes are natural barriers against erosion of the fastland. Both absorb the incident wave energy and therefore inhibit the erosion of the fastland. However, the beaches are usually very thin along the shoreline of Essex County due to a limited supply of sand in the littoral drift. Many areas, especially around Tappahannock and east of the town, have been artificially stabilized. These structures have usually been constructed on an individual basis, as compared to a sectional or community basis. Attendant with these structures has been the disappearance of beaches downstream, as sediment sources have been withdrawn from the system. Many areas have attempted to reestablish beaches by employing groin systems. However, these systems have proven of little value for most areas, since they depend upon the littoral transport of sand for success. In order to reestablish or maintain existing beaches, probably the only course of action would be a program of beach nourishment coincident with site specifically designed structures to trap moving sands. Any action would be costly and should entail a detailed study of the area and a unified solution.

It should be noted that most areas still suffering from erosion in Essex County are either used for agriculture or are unused. Any program of protection for these areas would probably be too costly to be justified.

Soils

A most important determinant of future development is the quality of the County's soils. Construction of roadways, building foundations, septic systems, forests, agriculture, and waste disposal depend upon soils conditions for their location. Therefore, land use, to a major extent, is dependent upon soils.

Soil is a mixture of air, water, mineral and organic matter, and living things. A detailed soils survey was prepared for the County in April 1989.

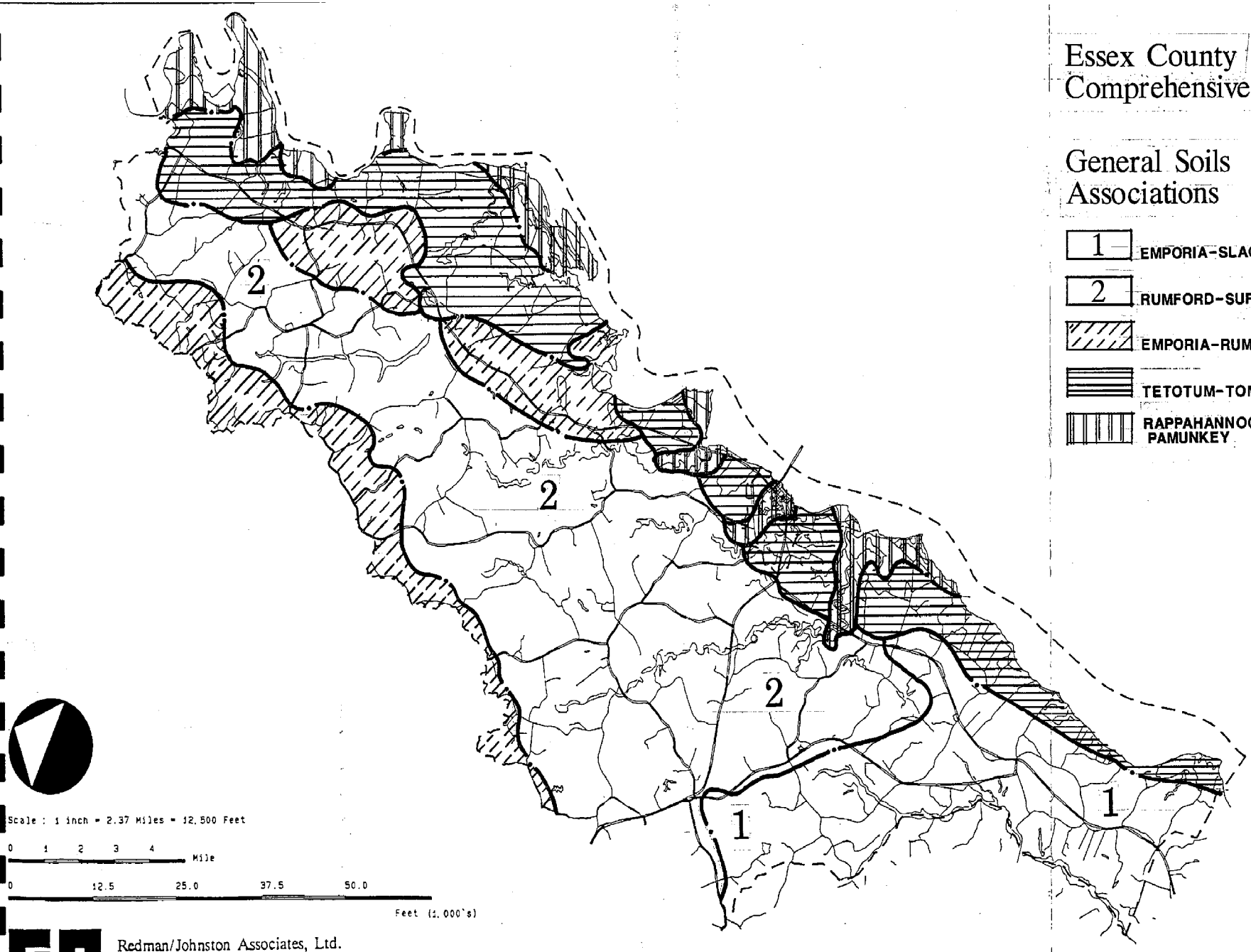
The following descriptions of the various soil associations found in Essex County provide only a summary of County-wide soil characteristics. Each soil association area contains soils of major extent and others of minor extent, with the overall soil area being named for the dominant soils. For more detailed evaluation of soils on a particular site, the County Soil Survey should be consulted. Map II-1 identifies the five general soil associations in the County for which descriptions are provided.

1. Emporia - Slagle - Atlee Association

This association consists of broad, nearly level plateaus, and narrow to broad, gently sloping ridgetops, and the sloping and steep side slopes of intervening drainageways that dissect the uplands; it is primarily that area of the County drained by the Dragon Swamp and its tributaries. Elevations range from 50 feet above seal level in the drainageways to 180 feet above sea level. Slopes range from 0 to 50 percent.

Essex County Comprehensive Plan

General Soils Associations



- 1 EMPORIA-SLAGLE-ATLEE
- 2 RUMFORD-SUFFOLK-EMPORIA
- EMPORIA-RUMFORD-SLAGLE
- TETOTUM-TOMOTLEY-STATE
- RAPPAHANNOCK-MOLENA-PAMUNKEY

Scale : 1 inch = 2.37 Miles = 12,500 Feet

0 1 2 3 4 Mile

0 12.5 25.0 37.5 50.0 Feet (1,000's)

Redman/Johnston Associates, Ltd.
Planning, Environmental Science, Landscape Architecture

Source: Soil Survey of Essex County, Virginia

MAP II-1

This association make up about 16 percent of Essex County. The association is about 12 percent Atlee soils, 22 percent Slagle soils, 23 percent Emporia soils, and 43 percent soils of minor extent. The Atlee soils are on level plateaus, generally between 120 and 170 feet elevation. The Atlee soils are moderately well drained and have moderately slow permeability in the subsoil. They have a silt loam surface layer, and a loam and clay loam subsoil with a brittle and compact layer at a depth of about 24 inches. The Slagle soils are on gently sloping, and sloping, slightly coves ridgetops, and concave areas near the heads of drainageways. The soils are moderately well drained and have moderately slow to slow permeability in the lower subsoil. They have a fine sandy loam surface layer, and a loam and clay loam subsoil. The Emporia soils are on nearly level to gently sloping ridgetops, and on steep side slopes around drainageways. The soils are well drained and have moderately slow to slow permeability in the lower subsoil. They have a fine sandy loam surface layer, and a sandy clay loam and clay loam subsoil.

The common minor soils are poorly drained Bibb oils on flood plains along drainageways, well drained Emporia soils on nearly level to gently sloping, slightly convex ridgetops, and somewhat excessively drained Rumford soils on sloping and steep slopes along drainageways.

About 20 percent of this association is in farmland. Most of the rest of the association is suited to and used for trees. Seasonal wetness and slope are the main limitations of many areas for non-farm development.

2. Rumford - Suffolk - Emporia Association

This association consists of level to steep narrow ridgetops, and sloping and steep side slopes of drainageways that dissect the uplands. Elevations range from less than 50 feet in the drainageways to 180 feet on higher knolls of the ridges. Slopes range from 0 to 50 percent. This association makes up about 45 percent of Essex County. The association is about 28 percent Rumford soils, 18 percent Suffolk soils, 16 percent Emporia soils, and 38 percent soils of minor extent.

The Emporia soils are on nearly level to sloping, slightly convex ridgetops and on steep side slopes along drainageways. They are well drained and have moderate permeability in the lower part of the subsoil. The Emporia soils have a surface layer of sandy loam to loam and a subsoil of loam, sandy loam, or sandy clay loam. The Suffolk soils are on nearly level to gently sloping, broad to narrow, slightly convex ridgetops. They are well drained and mostly moderately permeable. The Suffolk soils have a sandy loam surface layer and a sandy loam and sandy clay loam subsoil, underlain by loamy sand and sand.

The Rumford soils are on steep side slopes along drainageways and to some extent on gently sloping ridgetops. They are somewhat excessively drained and have moderately rapid permeability in the subsoil. They have a surface layer of sandy loam and a subsoil of sandy loam and loamy sand.

The Common minor soils are well drained and moderately well drained Kempsville and Slagle soils on gently sloping knolls on ridgetops and on steep side slopes of drainageways;

and poorly drained Bibb soils on floodplains along drainageways.

Farmland comprises about 35 percent of the acreage of this association, mostly on the nearly level and gently sloping area. Most of the rest of the association is suited to and used for trees. Slope is the main limitation of most areas for non-farm development.

3. Emporia - Rumford - Slagle Association

This association consists of level to sloping, narrow to broad ridgetops and sloping and steep side slopes of drainageways that dissect the uplands. Elevations range from less than 50 feet in the drainageways to 200 feet on the higher ridges in the northwestern portion of the County. Slopes range from 0 to 50 percent. This map unit makes up about 13 percent of the County. The Emporia soils are on intricately sloping, highly dissected, generally narrow ridges, and on steep side slopes of drainageways. They are well drained and have moderately slow to slow permeability in the lower subsoil. They have a fine sandy loam surface layer, and a sandy clay loam and clay loam subsoil. The Rumford soils are primarily on sloping and steep side slopes of drainageways. The are somewhat excessively drained, and have moderately rapid permeability in the subsoil. They have a surface layer of sandy loam and a subsoil of sandy loam and loamy sand.

The Slagle soils are on gently sloping and sloping, slightly convex ridgetops, and on concave areas around the heads of drainageways. The soils are moderately well drained and have moderately slow to slow permeability in the lower subsoil. They have a fine sandy loam surface layer, and a loam and clay loam subsoil.

About 20 percent of this association is farmed, mostly the nearly level and gently sloping areas. The rest of the area is suited to and used for trees. Slope and seasonal wetness are the main limitations for most non-farm uses.

4. Tetotum - Tomotley - State Association

This association is primarily on a broad, flat terrace that lies to the east of U. S. Highway 17, and runs the length of the County. Elevations range from about 10 feet above sea level to about 50 feet. A fluctuating seasonal high water table is a primary characteristic of about 3/4 of this association. Slopes range from 0 to 6 percent slope. This association makes up about 18 percent of Essex County. The association is about 30 percent Tetotum soils, 16 percent Tomotley soils, and 12 percent State soils, and 42 percent soils of minor extent. The Tetotum soils are on clearly level, broad flats and on gently sloping areas around drainageways. They are moderately well drained and have moderate permeability. They have a surface layer of fine sandy loam or loam, underlain by loamy sand.

The common minor soils are moderately well drained Munden soils on broad flats; somewhat poorly drained Augusta soils in depressions and ill-defined drainageways; poorly drained clayey Chickahominy soils on flats near the base of the escarpment to the uplands; and poorly drained Bibb soils on floodplains along drainageways.

Most of the acreage of this association is used for cultivated crops. A small percentage is wooded. Seasonal wetness is the main limitation for non-farm uses.

5. Rappahannock - Molena - Pamunkey Association

This association consists of broad, low-lying flats along the Rappahannock river and major creeks. Elevations range from sea level to about 15 feet above sea level. Slopes range from 0 to 6 percent. This association makes up about 8 percent of Essex County. The association is about 32 percent Rappahannock soils, 15 percent Molena soils, 12 percent Pamunkey soils, and 41 percent soils of minor extent. The Rappahannock soils are on tidal marshes along the Rappahannock River and major creeks. They are very poorly drained and consist of organic materials (muck) to a depth of about 40 inches.

The Molena soils are on broad flats primarily at the northern end of the County. They are somewhat excessively drained and rapidly permeable. They have a loamy sand surface layer, and have a subsoil of loam sand or sandy loam, underlain by sand. The Pamunkey soils are on narrow flats along the Rappahannock River. The soils are well drained, are moderately permeable in the upper subsoil, and have a seasonal high water table at a depth of 4 to 6 feet. They have a surface layer of loam and a subsoil of loam, fine sandy loam, and clay loam. The common minor soils are very poorly drained Levy soils on fresh water marshes at the northern end of the County; moderately well drained and somewhat poorly drained /bolling and Augusta soils in depressional areas and ill-defined drainageways.

About half of the acreage of this association is farmed; the rest is in tidal and fresh water marshes. Some areas are used for waterfront development, but seasonal wetness and flooding limits some areas for non-farm uses.

A detailed soil survey for Essex County was published in April 1989 through the Three Rivers Soil and Water Conservation District office located in Tappahannock, Virginia.

Soil suitability for septic systems and for agriculture are prime considerations in making decisions about general land use policies in Essex County.

Below is a table of soil types grouped into three categories:

1. Soils suited for septic systems;
2. Marginal soils - approximately 50% of these soils will not meet Health Department standards for septic systems; and
3. Soils unsuited for septic systems. This table, used in conjunction with the general soil map showing locations of the soil associations, will be a useful tool for locating areas best suited for development.

Soils Suitability for Septic Systems

	Acreage	Percentage
I. Soils suited for septic systems.		
A. Well drained, permeable soils with slight limitation:		
1. Pamunkey	2,058.00	1.2%
2. Rumford	2,590.00	1.6%
3. Suffolk	15,936.00	9.6%
Total Suited Soils =	**20,584.00**	**12.4%**
II. Marginal Soils, portions of which will not meet Health Department standards.		
A. Soils with moderate limitations:		
1. Bojac (wetness)	366.00	0.2%
2. Kempsville (permeability)	15,736.00	09.4%
3. State (wetness)	3,835.00	2.3%
B. Soils with severe limitations:		
1. Catpoint (too sandy - poor filter)	797.00	0.5%
2. Emporia (wetness, permeability)	15,537.00	9.3%
3. Molena (too sandy - poor filter)	2,519.00	1.5%
4. Munden (wetness)	2,068.00	1.2%
5. Sloping Rumford and Slagle (6-15% slopes)	16,413.00	9.8%
6. Tetotum (wetness)	9,442.00	5.7%
Total Marginal Soils =	66,713.00	39.9%

	Acreage	Percent
III. Soils Unsuited for Septic Systems		
A. Soils with severe limitations:		
1. Atlee (wetness, permeability)	3,433.00	2.1%
2. Augusta (wetness)	1,285.00	0.7%
3. Bibb (wetness, flooding)	10,159.00	6.0%
4. Bolling (wetness)	270.00	0.2%
5. Chickahominy (wetness, permeability)	1,517.00	0.9%
6. Sogue (wetness, permeability)	485.00	0.3%
7. Levy (wetness, flooding)	1,337.00	0.8%
8. New Flat (wetness Permeability)	572.00	0.3%
9. Rappahannock (wetness, flooding)	4,798.00	2.9%
10. Steep Rumford and Emporia (15-50% slope)	41,024.00	24.6%
11. Slagle (wetness, permeability)	9,164.00	5.5%
12. Tomotley (wetness, permeability)	5,459.00	3.3%
13. Gravel Pits (disturbed area)	199.00	0.1%
Total Unsuited Soils =	79,703.00	47.7%
Total County Acreage =	**167,000.00**	

Soil suitability for agriculture may be indicated by the prime farmland list developed for Essex County. Prime farmland, as defined by the U.S. Department of Agriculture, is the land that is best suited to producing feed, storage, fiber, and oilseed crops. It has the soil quality, growing season, and moisture supply needed to economically produce a sustained high yield of crops when it is treated and damaged using acceptable farming methods. Prime farmland produces the highest yields with minimal inputs of energy and economic resources, and farming it results in the least damage to the environment.

Soil types considered prime farmland in Essex County are:

	Acreage	Percent
Atlee silt loam (0 to 2% slopes)	3,433.00	2.1%
Augusta fine sandy loam (0 to 2% slopes), if artificially drained	1,285.00	0.7%
Bolling loam (0 to 2% slopes)	270.00	0.2%
Emporia fine sandy loam (0 to 6% slopes)	13,545.00	8.0%
Kempsville sandy loam (0 to 6% slopes)	15,138.00	9.0%
Munden fine sandy loam (0 to 4% slopes)	2,068.00	1.2%
Pamunkey loam (0 to 2% slopes)	2,058.00	1.2%
Slagle fine sandy loam (2 to 6% slopes)	6,972.00	4.2%
State fine sandy loam (0 to 6% slopes)	3,835.00	2.3%
Suffolk Sandy loam (0 to 6% slopes)	15,936.00	9.6%
Tetotum loam (o to 6% slopes)	9,442.00	5.7%
Tomotley fine sandy loam (0 to 2% slopes), if artificially drained	5,459.00	3.3%
Total =	**79,441.00**	**47.5%**
Total Land Acreage in County =	**167,000.00**	

The following are brief summaries of the soil association descriptions to use in conjunction with the soils map included in this document.

SOILS ASSOCIATIONS FOR ESSEX COUNTY

GENERAL SOIL MAP

1. Atlee - Slagle - Emporia Association: Moderately well drained and well drained, level to steep, loamy soils on the Coastal Plain upland. (Minor soils: Rumford, Kempsville, Bibb)

2. Kempsville - Suffolk - Rumford Association: Well drained and somewhat excessively drained, level to steep, loamy and sandy soils on the Coastal Plain upland. (Minor soils: Emporia, Bibb, Slagle)

3. Emporia - Rumford - Slagle Association: Well drained, somewhat excessively drained, and moderately well drained, gently sloping to steep, loamy and sandy soils on the Coastal Plain upland. (Minor soils: Atlee, Bibb, Kempsville)

4. Tetotum - Tomotley - State Association: Moderately well drained, poorly drained, and well drained, level to gently sloping, loamy soils on the middle terrace. (Minor soils: Munden, Chickahominy, Augusta, Bibb)

5. Rappahannock - Molena - Pamunkey Association: Very poorly drained, somewhat excessively drained, and well drained, level to gently sloping, mucky, sandy, and loamy soils on the low fluvial terrace. (Minor soils: Levy, Bolling Augusta)

Topography

The terrain of Essex County varies from flat to gently rolling. Land of less than 8% slope comprises the majority of the southern and eastern portion of the County, with greater slopes (over 8%) occurring intermittently along creeks and swamp areas. Further north in the County and west of Route 17 a greater proportion of the land is in the 8-15% slope category, with steeper slopes limited primarily to creek beds. Steeper slopes are more pronounced in the Baylors Creek and Elmwood Creek areas of the Occupacia District.

Slopes of less than 8% present no development limitations and flat land is plentiful in Essex County. Areas indicated as moderately sloping, 8-15% are generally suitable for development with some modifications in construction necessary to prevent erosion. Land of greater than 15% slope is generally considered unsuitable for development since more level land is plentiful and less costly to develop. Steep slopes are generally not considered a major deterrent to development except in a small area of the northwestern portion of the County. However their location often occurs adjacent to County creeks and tributaries throughout the County and as such represent a development constraint. Where these areas occur they should remain undeveloped. Map II-2 provides a general representation of the location of steep slopes (over 25%) in the County.

Floodplains

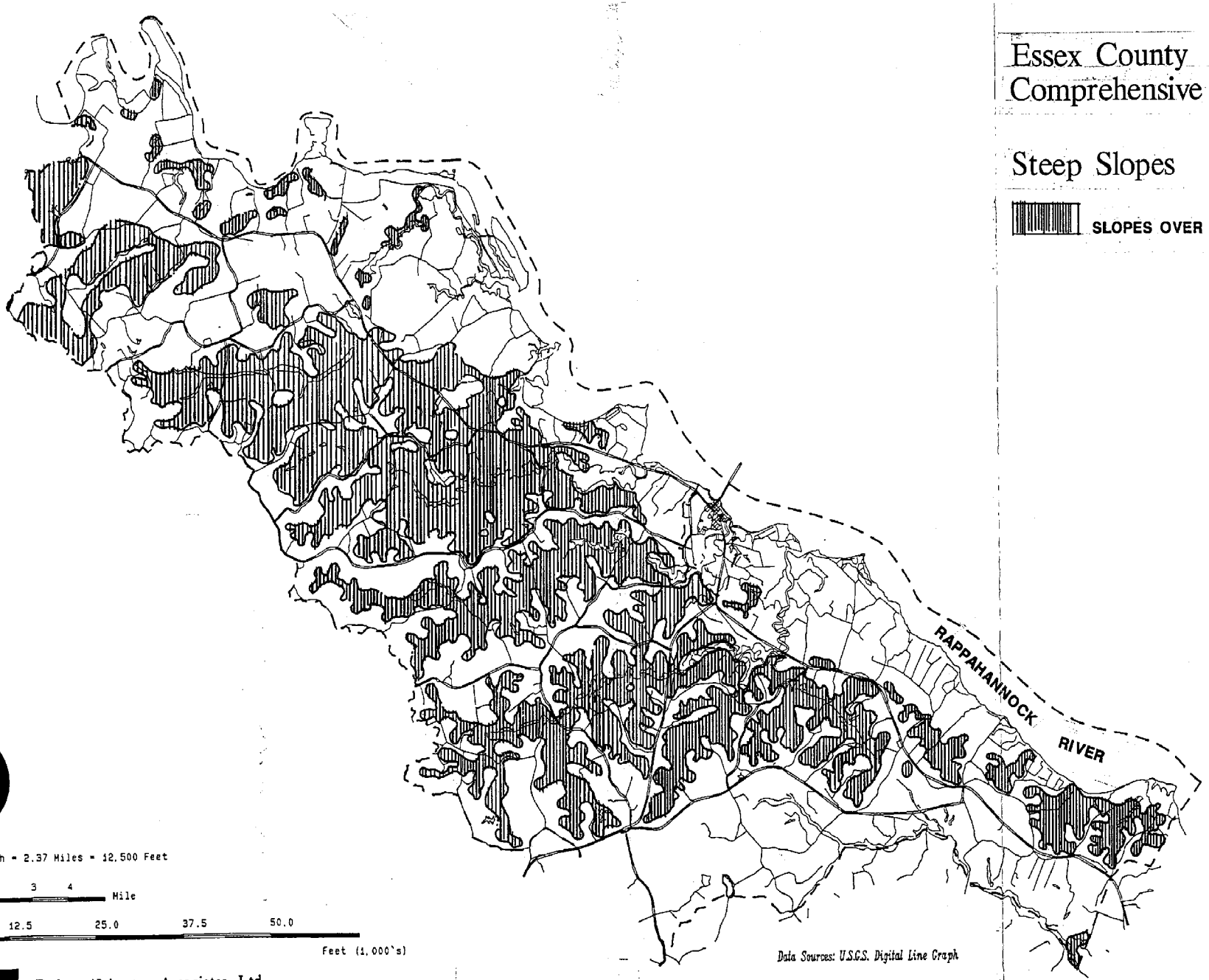
Floodplains are nearly level land areas which border streams and rivers are occasionally flooded unless artificially protected. The actual boundary of a floodplain varies significantly depending on the designated frequency of flooding. The 100 year frequency is most often used to determine flood hazard areas. The 100 year floodplain is the area which has a 100 percent probability of being flooded at least once during a 100 year time period; or a 1 percent change of flooding each year.

The 100 Year Floodplain is recognized by federal regulations as the areas where the potential for flooding is a significant hazard and where development should be limited or not occur at all. The floodplain is divided into two sections; the floodway and the floodway

Essex County Comprehensive Plan

Steep Slopes

SLOPES OVER 25%



Scale : 1 inch = 2.37 Miles = 12,500 Feet

0 1 2 3 4 Mile

0 12.5 25.0 37.5 50.0 Feet (1,000's)

Redman/Johnston Associates, Ltd.
Planning, Environmental Science, Landscape Architecture

Data Sources: U.S.G.S. Digital Line Graph

Middle Peninsula Planning District Commission, 1991

MAP II-2

fringe. Federal Emergency Management Agency (FEMA) requirements address the direct aspect of potential damage that can occur if new development takes place in areas subject to flooding. To qualify for flood insurance, floodway development is prohibited, and floodway areas are, therefore, well protected. The floodway is the land areas which is directly adjacent to the water channel. Although FEMA does not prohibit construction in the floodway fringe, development is not encouraged. Floodplain filling and development can result in a major loss in the storage capacity of flood waters, alter drainage patterns, and cause an increased velocity and volume of runoff. While development located on the filled floodplain is reasonably safe from flooding, areas downstream may experience increased flood heights and greater channel water velocity.

Maps of the County's 100 Year Floodplain are available for inspection in the office of the County Administrator.

Wetlands

There was a time, not too long ago, that wetlands (marshes, bogs, pocosins, and mucky soils) were viewed as sources of disease and pestilence. Early government involvement with wetlands were giveaway programs with the condition that they be drained and filled for useful purposes such as farming. In the 20th century, well-intentioned public and private efforts to provide flood protection, mosquito control, greater agricultural productivity, better highways, and many other benefits to society have often resulted in filling or draining of wetlands for farming, forestry, industry, and development.

In more recent years, research has concluded that wetlands play a vital role in the environment. Wetlands are valuable for the many physical, hydrological, biological, and cultural functions which they provide. These include:

Physical

- Wetland vegetation and shallow waters absorb coastal wave energy and reduce shore erosion.
- Wetlands slow water velocity and reduce sediment in the water.
- Wetland plants and bottom sediments are sinks or collectors of excess nutrients such as nitrates and phosphorous.
- Wetlands trap water borne heavy metals, herbicides, and pesticides.
- Wetland plants re-oxygenate water thereby lowering biological oxygen demand.

Hydrological

- Wetlands act as floodways when associated with rivers and adjacent floodplains which convey water downstream.
- Wetlands store water during floods and release volumes slowly,

reducing drastic flood urges.

- Wetlands, while most often are water discharged areas, also may act as water recharge areas.

Biological

- Wetland plants and invertebrates serve as the basis of a highly productive food chain.
- Wetlands are nursery and spawning areas for many species of finfish and shellfish. From 60 to 90 percent of commercially caught fish depend on coastal wetlands for food spawning.
- Wetlands are also an important habitat for many waterfowl and wildlife species, serving as protective areas for feeding, resting, and breeding.
- Wetlands are habitat for many rare and endangered species, almost 35 percent of protected animal species are found in wetlands, although wetlands cover only about 5 percent of the nation's land area.

Cultural

- Wetlands often contain important historical and archeological sites since they were early sources of food.
- Wetlands serve important recreational and commercial values for fishing, hunting and trapping.
- Wetlands which are forested may be managed for valuable timber production.
- Wetlands provide scenic open space and often serve as areas for bird and wildlife observation.

In light of the above described benefits, wetland activities are increasingly being regulated. In Virginia, tidal wetlands are protected by the 1972 Wetlands Protection Act, as amended. This law requires a special permit prior to starting construction, dredging, or filling a tidal wetland. The Act also empowers local jurisdictions to establish Wetlands Boards which may review and decide permit requests. Essex County has a Wetlands Board. The Virginia Marine Resources Commission has the ultimate authority to administer the Wetlands Protection Act and reviews all decisions issued by local boards.

Nontidal wetlands are currently federally regulated by Section 404 of the 1977 Clean Water Act, as amended, which prohibits disposal of dredged or fill material into "waters of the United States" and adjacent wetlands. This has been broadly interpreted by the Environmental Protection Agency (EPA) to include virtually all surface waters in the nation, regardless of size. The Virginia General Assembly is currently considering statewide nontidal wetlands protection legislation.

The recently adopted Chesapeake Bay Preservation Act and Chesapeake Bay Preservation

Area Designation and Management Regulations establish mandatory provisions for local Tidewater jurisdictions to protect wetlands and water quality. This legislation and its implications for Essex are discussed later in this chapter.

Tidal Marshes

Tidal Marshes are located along 84% of the County's Rappahannock River shorefront and in many cases are extensive in the land areas they occupy. Noteworthy are Otterburn and Beverly Marshes as well as extensive marsh areas along Broad Creek, Taylors Creek, Hoskins Creek, Piscataway Creek and Dragon Run Swamp.

With decreases in salinity in the upper reaches of the creeks and rivers, vegetation becomes more diverse. The wildlife species present depend on salinity, marsh elevation, soils, and other factors. Those marshes have the greatest diversity of vegetation, such as those in brackish waters, have the highest wildlife values.

Nontidal Wetlands: Swamps & Pocosins

Nontidal wetlands typically include freshwater swamps, bogs and low lying areas where water stands on or close enough to the surface to create oxygen poor conditions in the soil. Special types of plants called hydrophytes are adapted to these conditions and usually indicate the presence of wetlands. Other nontidal wetland indicators are waterlogged soils and drainage patterns that show physical evidence of flooding.

The U.S. Fish and Wildlife Service has mapped all County nontidal wetlands of three acres or more in size as part of the National Wetlands Inventory. These maps are available for inspection at the Office of the County Administrator. Map II-3 provides a general representation of the location of both Tidal and Nontidal Wetlands in the County.

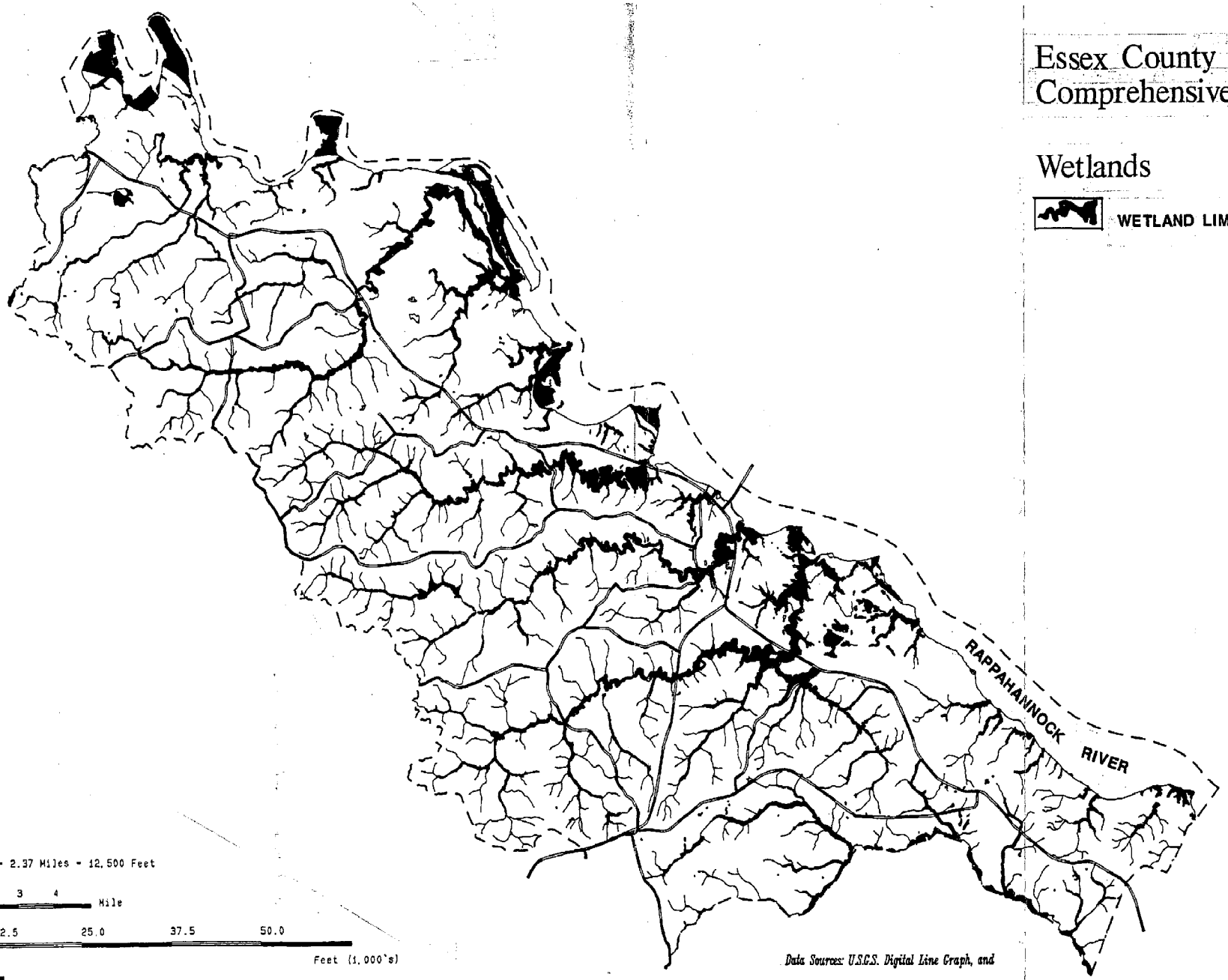
Forest Resources

The forest industry in Essex County is an important component of the County economy and County rural character. Roughly 105,000 acres or 63% of the total County land area is established in forest cover. The patterns of ownership and management of forest resources are important when considering forested areas as biological habitat or for their value in protecting water quality. Forested areas provide habitat for numerous plant and wildlife species and also are an excellent filter area for groundwater recharge. Forests also form an excellent windbreak in agricultural areas and serve to prevent windblown soil erosion. In addition, forested areas serve as an effective visual and noise buffer between land uses. Best management practices for the timber industry ensure the conservation of the County's extensive forest resources.

Essex County Comprehensive Plan

Wetlands

WETLAND LIMITS



Scale : 1 inch = 2.37 Miles = 12,500 Feet

0 1 2 3 4 Mile

0 12.5 25.0 37.5 50.0 Feet (1,000's)

Redman/Johnston Associates, Ltd.
Planning, Environmental Science, Landscape Architecture

Data Sources: U.S.G.S. Digital Line Graph, and F.W.S. National Wetland Inventory

Middle Peninsula Planning District Commission, 1991

MAP II-3

Wildlife

The number and diversity of wildlife species present in an area is determined in part by the quantity and quality of wildlife habitat which is available, especially food availability and cover. The major threat to indigenous species in developing areas is the fracturing and fragmenting of habitat areas. When habitat is cleared for development or agriculture, not only is the cleared habitat area lost, but the habitat area is also degenerated at the development edge. This results in disturbance to interior habitat areas as well. Certain species of wildlife require large, unfragmented habitat ares in order to survive.

The Virginia Department of Conservation and Historic Resources' Natural Heritage Program and the Department of Game and Inland Fisheries' Fish and Wildlife Information System currently maintain inventories of wildlife resources and habitats for the County. Endangered and threatened plant species are protected by the Virginia Department of Agriculture and Consumer services, which uses information from the Natural Heritage Program inventory.

The Natural Heritage Program was established in 1986 in joint cooperation with the Nature Conservancy to identify elements of natural biological diversity which are of rare or special concern in Virginia. The program focuses on rare plants, animals, geological landmarks, natural ecological communities, and other natural features. The locations and characteristics of these natural features are entered into a computerized data base. Sites are rated and superior habitats are targeted for acquisition using the State's Natural Area Preservation Fund. The Natural Heritage Program also makes information on acquiring environmental easements available to property owners.

The Department of Game and Inland Fisheries has a similar information base of wildlife for planning and management purposes. General mapped habitats may be obtained for planning and/or preservation purposes, but locations of specific sites are closely guarded in order to protect the habitat.

The Chesapeake Bay Preservation Act

The Chesapeake Bay is the most significant and important natural resource in the Tidewater Region of Virginia. In response to recent interstate regional agreements between Virginia, Maryland, Washington D.C., and Pennsylvania to clean-up the Chesapeake Bay, the State of Virginia has adopted the Chesapeake Bay Preservation Act which mandates all Tidewater Virginia localities to establish programs, plans, and ordinances to protect and improve Bay water quality. These "local programs" must be in conformance with the Chesapeake Bay Preservation Area Designation and Management Regulations adopted by the Virginia Legislature in September 1989. In Essex County, the Rappahannock River watershed and all associated tributaries are affected by these regulations.

The purpose of the Act is to protect and improve the water quality of the Chesapeake Bay,

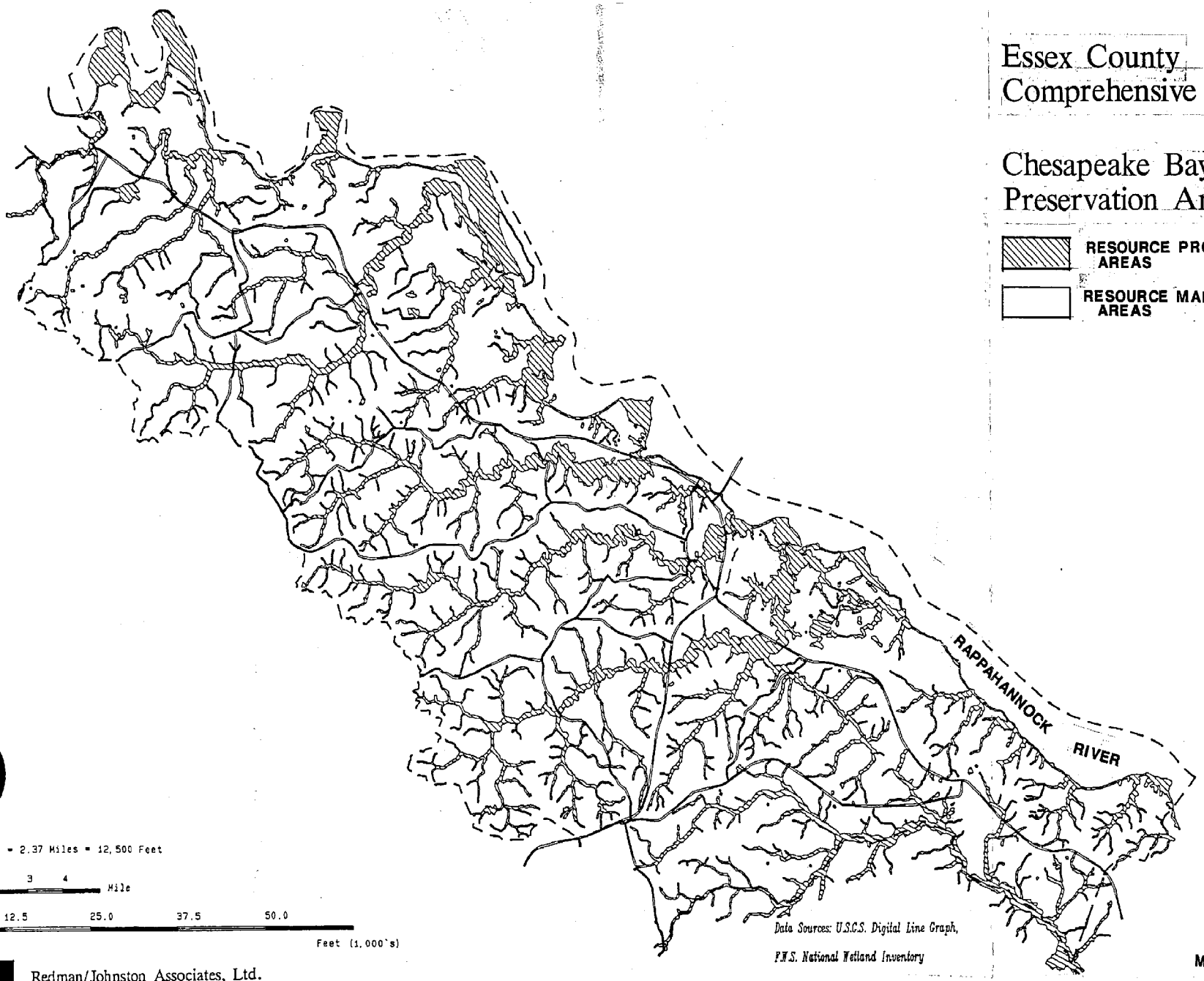
its tributaries, and other state waters by minimizing the effects of human activity upon these waters and implementing the Chesapeake Bay Preservation Act, which provides for the definition and protection of certain lands called Chesapeake Bay Preservation Areas, which if improperly used or developed may result in substantial damage to water quality of the Chesapeake Bay and its tributaries.

The regulations establish the criteria that the County has used to determine the extent of the Chesapeake Bay Preservation Areas within its jurisdiction. The regulations establish criteria for use by local governments in granting, denying, or modifying requests to rezone, subdivide, or to use and develop land in Chesapeake Bay Preservation Areas. The regulations identify the requirements for changes which local governments shall incorporate into their comprehensive plans, zoning ordinances, and subdivision regulations to protect the quality of state waters pursuant to the Chesapeake Bay Preservation Act. Essex County with the assistance of the Middle Peninsula Planning District Commission has identified and mapped Resource Protection Areas (See Map II-4) with all other County land area designated Resource Management Areas consistent with the Acts requirements. Effectively, both classifications render the entire County within the Chesapeake Bay Preservation area.

The County has submitted proposed amendments to the County Zoning Ordinance designed to implement Bay Act requirements to the Chesapeake Bay Local Assistance Board for approval prior to local adoption within the past few months. These ordinances change together with the Natural Resources and environmental protection plan element contained later in this document demonstrate the County's interest and commitment toward implementation of this State initiative.

Essex County Comprehensive Plan

Chesapeake Bay Preservation Areas



RESOURCE PROTECTION AREAS

RESOURCE MANAGEMENT AREAS

Scale : 1 inch = 2.37 Miles = 12,500 Feet

0 1 2 3 4 Mile

0 12.5 25.0 37.5 50.0 Feet (1,000's)

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Planning, Environmental Science, Landscape Architecture

Data Sources: U.S.G.S. Digital Line Graph,
F.W.S. National Wetland Inventory

Middle Peninsula Planning District Commission, 1991

MAP II-4

POPULATION CHARACTERISTICS AND TRENDS

Study of the County population tells us more than just the number of people residing in Essex County. Historic accounts of population numbers and analysis of the change in numbers, by migration or natural increase, indicate population projections for future years. This enables the County to plan what types and amounts of various land uses will be required. Where population growth occurs, services must be provided. Racial, age and educational composition change in the population indicate what types of services will be necessary in the future.

Population figures in this chapter have come from the U.S. Census Bureau decennial census and various reports taken from them. The Tayloe Murphy Institute for the University of Virginia supplied estimates and projections based upon local indicators such as vital statistics, building reports and school enrollment.

Historical Perspective

Essex County took a decrease in population in the early portion of the century as did most rural areas when jobs were few and the city had more to offer (Table II-1). From the period 1960 to 1980, the population made steady increases attributable to natural increase and stability of the base population. About 1965 the migration rate began to turn and in-migration has played an important part in the population growth since that time with the decade of the seventies reflecting a nearly 25% County population increase (1,765 new residents). The recent release of the 1990 Census suggests that in spite of issuance of 732 permits for new homes during the decade of the eighties, the County population reflected a decline.

TABLE II-1

POPULATION GROWTH TRENDS

Magisterial District	1920	1930	1940	1950	1960	1970	1980	1990
Central	2995	2565	2865	2896	3238	3606	4583	4258
Occupacia	2593	2117	2985	1801	1785	1759	2203	2125
Rappahannock	2954	2294	2046	1833	1667	1734	2078	2306
Essex Count Total	8542	6976	7006	6530	6530	7099	8864	8689

Source: U.S. Bureau of the Census
Tayloe Murphy Institute

Population Distribution

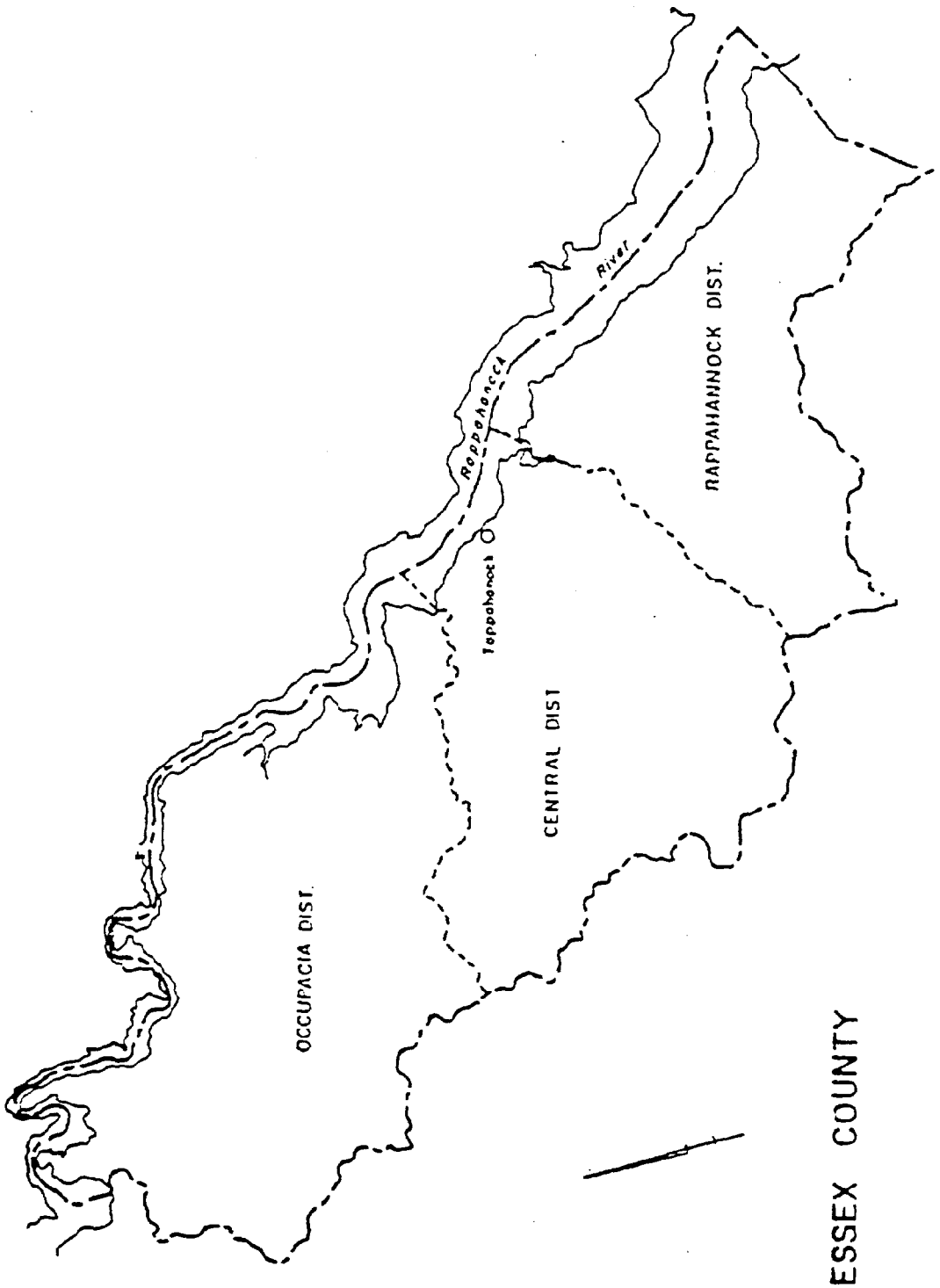
It is apparent from Table II-1 that most of the growth of the 60's and 70's occurred in and around Tappahannock in the Central District. During the same period, the Occupacia District showed a significant increase due to subdivision development in the lower portion of the district. During the 80's the Rappahannock District showed growth while population declined in the Central and Occupacia Districts. Table II-2 shows that in 1920, population was divided fairly evenly among the three districts whereas by 1970, the Central District contained half of the population, the Rappahannock and Occupacia Districts each containing half of the remainder. The distribution of County population today is generally consistent with the distribution evident in 1970.

Table II-3 reflects population density in the County for the periods 1990 and 1980. The County-wide population density in 1990 is even lower than that established in 1980 due to the apparent slight population decline during the eighties. (See Table II-4). The breakdown of current density by magisterial district reflects densities quite similar to those manifest in 1980 (See Table II-3. Clearly the density of population of over 18 acres per person reflects a very rural County character.

TABLE II-2

Percent Distribution Among Magisterial Districts

Magisterial District	1920	1930	1940	1950	1960	1970	1980	1990
Central	35%	37%	41%	44%	48%	51%	52%	49%
Occupacia	30%	30%	30%	28%	27%	25%	25%	24%
Rappahannock	35%	33%	29%	28%	25%	24%	23%	27%


Rappahannock River
Tappahannock
RAPPAHANNOCK DIST.
CENTRAL DIST
OCCUPACIA DIST.
ESSEX COUNTY

MAP II-5

TABLE II-3
POPULATION DENSITY, 1970, 1980

TABLE II-3								
POPULATION DENSITY, 1990 - 1980								
					Density			
	Population		Area		Persons/Sq.Mile		Acre/Person	
Magisterial District	1990	1980	Sq. Miles	Acres	1990	1980	1990	1980
Central District	4258	4583	83.4	53,376	51.0	54.9	12.5	11.65
Occupacia District	2125	2203	99.9	63,936	21.3	22.0	30.0	29.02
Rappahannock District	2306	2078	67.5	43,200	34.1	30.8	18.7	20.79
Essex County	8689	8864	250.8	160,512	34.6	35.3	18.5	18.11

TABLE II - 4

1990 POPULATION DENSITY

Population	Density in Persons per Square Mile	Density in Acres/Person
8689	34.6	18.5

Population Characteristics

The population of Essex County in 1990 was composed of almost 38% non-white (predominately black) residents, the greatest number of which resided in the Central Magisterial District (Table II-5). The Occupacia District however, is currently home to the highest percentage of non-white population among all districts.

TABLE II-5

Minorities as a Percentage of

Total Population by Magisterial District - 1990

Magisterial District	Number	% of Total County Population	% of Total District Population
Central	1,550	17.8%	36%
Occupacia	1,118	12.8%	53%
Rappahannock	602	6.9%	26%
Essex County	3,270	37.6%	—

The minority population in 1990 (3,270 residents) reflects a decline of about 400 non-white residents since 1980. This decline is somewhat greater than the total population decline reflected in the 1990 census indicating a modest reduction in the % of the total non-white population.

While minorities represented 41.5% of the total County population in 1980, today they represent roughly 38% of the total resident population.

Total Population: 8,689

TABLE II-6
Essex County Population - Age, Sex, Distribution by Race, 1990

Sex	Age	No. White	No. Non-White	% of Total Population White	% of Total Population Non-White	% Change 1980 - 1990 White	% Change 1980 - 1990 Non-White
Male	Under 5	156	103	1.7%	1.1%	2.6%	- 30.0%
	5-19	502	360	5.7%	4.1%	- 6.7%	- 33.5%
	20-34	478	369	13.0%	0.0%	-13.0%	0.0%
	35-54	684	360	7.8%	4.1%	19.5%	1.0%
	55-64	286	142	3.3%	1.6%	8.3%	- 3.4%
	65 & Over	419	183	4.8%	2.1%	9.3%	0.0%
	Total	2,525	1,517	29.0%	17.5%	2.7%	- 12.2%
Female	Under 5	125	126	1.4%	1.4%	- 25.0%	16.0%
	5-19	492	372	5.7%	4.3%	- 8.8%	- 34.0%
	20-34	485	418	5.6%	4.8%	- 19.1%	4.5%
	35-54	724	397	8.3%	4.6%	31.0%	8.1%
	55-64	318	154	3.7%	1.8%	- 5.9%	13.2%
	65 & Over	660	286	7.6%	3.3%	15.9%	20.0%
	Total	2,804	1,753	32.3%	20.2%	1.0%	- 3.4%

Source: U. S. Bureau of the Census, 1990

Table II-6 gives the age, sex and racial breakdown of the Essex population as of the 1990 Census. The elderly population (over 65 years of age) comprises 17.8% of the County population presently and reflects a large proportionate increase from 1980 to 1990 as people live longer and families retire or pre-retire to the Essex County waterfront.

The 1990 Census of Population indicates that since 1980 the County population is aging. 18% of the County Population or 1,551 residents are now over 65. Table II-7 indicates that through comparison of 1980 and 1990 statistics that the percentage of County residents in all age groups over 35 years of age has increased in recent years.

Nationwide the average household size is decreasing as families are having fewer children, divorce rates increase and relatives maintain individual households longer. Household size is characteristically somewhat larger in families of lower income and minority groups. Table II-8 shows the decreasing household size in all districts, Occupacia District having a larger average, yet showing the greatest proportionate decrease since 1960. Although not yet available by magisterial district, the total households County-wide in 1990 is 3,258. The average household size in 1990 was 2.67 as compared to 2.8 in 1980.

Educational level attained by the Essex County population showed a marked increase from 1960 to 1970 (Table II-9). In 1970, approximately 17% of the population had graduated high school (one out of every six persons over 25 years of age). In 1980, this figure was 22.8%. Although 1990 census statistics concerning educational characteristics are not yet available it is expected that later publication will reveal continued improvement in educational levels.

TABLE II-7

AGE CHARACTERISTICS OF ESSEX COUNTY POPULATION

1980 & 1990

Age	1980 Population	1990 Population
Under 5	562	514
5 - 19	2183	1742
20 - 34	1917	1768
35 - 54	1846	2204
55 - 64	885	910
65 and over	1374	1551
TOTAL COUNTY POPULATION	8864	8689

TABLE II-8

Household Size by Magisterial District

No. of Households	1960	1970	1980
Central	870	1,093	1,652
Occupacia	398	463	644
Rappahannock	461	525	736
Total Essex County	1,729	2,081	3,032
Average Household Size	1960	1970	1980
Central	3.7	3.3	2.8
Occupacia	4.5	3.8	3.4
Rappahannock	3.6	3.3	2.8
Total Essex County	3.0	3.4	2.9

TABLE II-9

Educational Level - 1980

	Completed H.S.		Completed 4 Yrs. College	
	White	Non-White	White	Non-White
Total Population 25 Yrs. or Older	904	340	531	128

Total Population 25 Yrs. or Older:	5,466
% Completed High School	22.8%
% Completed 4 Years College	12.0%

Summary

Essex County saw a modest population decline from 8864 residents in 1980 to 8689 in 1990 based on preliminary Census Counts. The County population aged somewhat during the period. The number of residents in the age group 35-54 and all elder age groups increased during the period. A corresponding modest reduction in the school age population was also evident through the same period. These trends suggest County programs may at some point require redirection in meeting the special needs (health care/transportation) of an older population.

HOUSING

Housing is a need common to all Essex County citizens, and their particular housing needs differ as greatly as their number. Often the type of housing required is not available due to economic conditions, attitudes, regulations or environmental conditions. This chapter will review the current housing situation, local housing activities and issues, housing trends, current and future housing needs and the problems and potential steps toward solutions.

Census figures for housing in Essex County include the data for Tappahannock. A comparison of the data from 1970 to 1980 to 1990 reveals some changes that have occurred during that time.

TABLE II-10

POPULATION AND NUMBER OF HOUSING UNITS

	1970[a]	1980[b]	1990c
Population	7099	8864	8689
Total Housing Units	2784	4082	4073
Vacant Seasonal and Migratory	271	629	815
Year-Round Housing Units	2513	3453	3258

Source:
a. 1970 Census of Housing, Housing Characteristics for States, Cities and Counties, Vol. 1, Pt. 48, Virginia
b. 1980 Census, General Housing Characteristics, HC 80-1-A48.
c. 1990 Census, UVA Academic Computing Center. (Preliminary Counts)

The total number of housing units in the County has decreased slightly (9 units), over the last decade. However, in 1970, the average number of persons per household in Essex was 3.4 persons. In 1980 this figure had dropped to 2.87 and in 1990 further dropped to a 2.66 average household size. Given the trend toward decreasing household size, a greater number of housing units would be required to accommodate the same population as existed in the County in 1980. However, the decrease in population over the period 1980 to 1990 generally corresponds to the drop in year round housing units. Noteworthy however, is the almost 200 unit decrease from 1980 to 1990 in vacant and seasonably occupied units.

The following table contains housing information broken down by occupancy in Essex County.

TABLE II-11
HOUSING UNITS BY OCCUPANCY

	1980[b]	1990b	Change in No. of Units
Total Units	4082	4073	- 9
Vacant Units, Year Round	413	237	-176
Vacant, Seasonal & Migratory	629	578	- 51
Total Occupied Units Owner Renter	3040 2381 659	3258 2571 687	+ 218 + 190 + 28

Year	Total Occupied Units	Owner Occupied Units	Renter Occupied Units
1980	3040	2381	659
	Percentage of Total	78.3%	21.7%
1990	3258	2571	687
	Percentage of Total	78.9%	21.%

Source: a. 1980 Census, General Housing Characteristics HC 80-1-A48.

b. 1990 Census, UVA Academic Computing Center (Preliminary Counts)

Total housing stock in the County decreased by 9 units between 1980 and 1990. However, the number of occupied units increased by 218 during the same period. The number of vacant units in the County inventory dropped significantly from 413 in 1980 to only 237 units in 1990. These characteristics suggest either vacant units in 1980 became occupied during the ten year period or were demolished. It is likely that some of both occurred over the 10 year period. Units held as vacant for seasonal use over the period also dropped, suggesting many of these units may now be classified as occupied year round. It is likely many pre-retirement seasonal homes became occupied retirement homes during this time. During the same period, mobile homes also showed a tremendous increase in proportion to the total number of new homes; an additional indication that economic conditions heavily influenced residential activities in Essex County.

Noteworthy features of Table II-11 are outlined here, briefly:

- The number of vacant year-round units declined by 176 or 42% from 1980 to 1990
- There are 51 fewer units under the vacant seasonal and migratory category suggesting that many of the new units added between 1980 and 1990 are occupied year round reversing the trend of the 70's in "second home" construction. In spite of the drop in population from 1980 to 1990 the decade evidenced the addition of 218 new households as a function of decreasing average household size.
- Of the total occupied housing units in 1970 and the total in 1980, the percentages split between owner- and renter-occupied indicating that rental housing had not increased at the rate that owner-occupied housing had. This appeared to be a problem for that portion of the population that did not desire permanent ownership of a home at this point. While this trend continued in the 1980's the percentage share increase in owner occupied housing was only slight suggesting the trend of the 1970's has leveled off.

A review of Building Permits for residential construction during the same 10 year period indicates that 732 permits for new homes were issued during the decade. Almost one-half of these permits were for mobile homes. 60% of all permits issued were issued in the period of 1986 to 1990 indicating somewhat greater development activity in the second half of the decade.

Table II-12 shows the building permit activity for the decade by type of construction. It is difficult to ascertain the actual distribution of development in the County in the past 10 years. Although 1990 Census results are not yet available to confirm it, it is likely the Central Magisterial District received the largest percentage of new construction given the availability of sewer and water facilities, the role of the Town as a regional center of Commerce and the fact that the District has historically been home to just over one-half of the total population and household in the County. Table II-13 reflects their distribution in 1980.

TABLE II-12

Building Permits, Essex County 1981 - 1990

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
MH	24	32	30	32	23	30	40	47	34	47
CR	24	28	35	30	35	37	36	50	54	64

MH - Mobile Homes
CR - Conventional Residences

Source: Review of Essex County & Town of Tappahannock Permits
County Staff & Redman/Johnston Associates, February, 1991

TABLE II-13

1980 HOUSING DISTRIBUTION BY MAGISTERIAL DISTRICTS

	Total Persons	Total Housing Units	Total Year-Rd. Units	Occupied Units Owner	Renter	Total
Essex County	8864	4082	3453	2381	569	3040
Central District	4530	1913	1775	1191	431	1622
Occupacia Dist.	2219	774	732	552	131	683
Rappahannock Dist.	2115	1395	946	638	97	735

Source: 1980 Census of Housing; General Housing Characteristics, Vol. Part 48, Virginia.

The following table contains a breakdown of housing in the County according to magisterial districts in 1980. Concentrations of housing units in the Central District and seasonal units in the Rappahannock District at that time are revealed in this table. A more detailed discussion for these features follows.

TABLE II-14

HOUSING DISTRIBUTION BY MAGISTERIAL DISTRICTS (1980)

	Total Persons	Total Housing Units	Total Year-Round Units	Occupied Units		
				Owner	Renter	Total
Essex County	8864	4082	3453	2381	659	3040
Central District	4530	1913	1775	1191	431	1622
Occupacia District	2219	774	732	552	131	683
Rappahannock District	2115	1395	946	638	97	735

Source: 1980 Census of Housing; General Housing Characteristics, Vol. Part 48, Virginia

In 1980 the Central District was by far the most populous and contained 51.1% of the total County population as opposed to 25% in Occupacia, and 23.9% in the Rappahannock District. As a percentage of the total County housing, the Central District again had a greater percentage with 46.9%, followed by 34.1% in the Rappahannock District and 19.0% in the Occupacia District. Compared to its share of the County population, the number of housing units in the Rappahannock District was unexpectedly high. This is primarily due to the concentrations of housing along the shoreline in this district. Much of this housing at that time was seasonal. An examination within each district of the percentage of year-round structures as a portion of each district's total housing units, further illustrates the point. Housing units in the Central District were 92.8% year-round. In the Occupacia

District, 94.6% were year-round. However, in the Rappahannock District, only 68.8% are year-round structures. Although census results by each district are not available to permit comparison in 1990, it is likely the percentage of units occupied year round in the Rappahannock district is now somewhat higher given the total reduction in seasonal units County-wide and the population growth sustained in this district during the 1980's.

The condition of housing in the County is an element as important as quality and distribution. Some factors considered in making determinations regarding the overall quality of housing stock in Essex include the presence or lack of plumbing facilities, household income levels, values, and the incidence of overcrowding.

TABLE II-15

SELECTED CHARACTERISTICS OF OCCUPIED, YEAR-ROUND HOUSING UNITS

1980 CENSUS

		Plumbing Characteristics		
	Total Owner Occupied	Lacking Complete Plumbing for Exclusive Use	Total Renter Occupied	Lacking Complete Plumbing for Exclusive Use
Essex Co.	2381	223	659	163
Central District	1191	97	431	64
Occupacia District	552	73	131	62
Rappahannock District	638	53	97	37

TABLE II-16

OVERCROWDING; 1.01 OR MORE PERSONS PER ROOM

	Total	Lacking Complete Plumbing for Exclusive Use
Essex County	194	87
Central District	85	38
Occupacia District	67	36
Rappahannock District	42	13

Source: 1980 Census, Selected Housing Characteristics, Table 45.

Structural condition is difficult to assess even when there is a means of conducting such a survey. Another indicator of the presence of substandard housing in the County is a summary of the dollar value of the units.

TABLE II - 17

CHANGE IN FINANCIAL CHARACTERISTICS 1980 TO 1990		
Value	1980 Owner Occupied Housing Units	1990 Owner Occupied Housing Units
Under $10,000	68	41
$10,000 - $19,999	135	55
$20,000 - $29,999	276	61
$30,000 - $39,999	298	164
$40,000 - $59,999	401	381
$60,000 - $99,999	305	601
$100,000+	75	400

Source: 1980 to 1990 Census, Selected Housing Characteristics

Although value alone does not indicate the soundness of a dwelling, it is reasonable to assume that a housing unit (other than a mobile home) valued at less than $30,000 is probably substandard suggesting some 157 units in the County may presently be substandard. Although lack of Census Data for 1990 concerning absence of plumbing facilities does not permit comparison with 1980 data shown in Table II-16 the overcrowding of units (units with more than 1 person per room) appears to have eased. The 1990 Census indicates 100 units are overcrowded compared to 194 in 1980. General indicators are fewer substantial units exist today than did in 1980 based on dramatic value increases and comparison of overcrowded unit over the past 10 years.

LAND USE

For planning purposes, the pattern of development is more significant than the total acreage in each category of land use or number of structures in each activity. These patterns in Essex County have been a product of residential development preferences, economic forces, environmental factors, and social forces. The County also has had the benefit of zoning and subdivision regulations which have influenced, somewhat, the pattern and pace of residential, commercial and industrial development.

The most predominant use of land in Essex County is forestry. Forests dominate approximately 63% of the total County land area and all but a very small percentage is privately owned.

TABLE II-18

Essex County Land Use Acres (Estimated)[1]

	Acres	% of County Land Area
Crop Land	40,000	25.1%
Pasture and Hay Land	9,500	5.9%
Wood Land	100,000	62.9%
Other Land[2]	9,700	6.1%
TOTAL	159,600	

[1] From SCS data.
[2] Includes urban, industrial, residential, transportation, and wildlife land.

Agricultural uses involve another 31% of the total land area. Forested and agricultural uses combined amount to 94% of the County. The remainder of 6.1% includes urban, industrial, residential, transportation, and wildlife land. Typical of a rural County, the percentage of County land devoted to each use has changed very little in the past ten years.

The remainder of this chapter will look at the trends and situation of each type of land use activity: agriculture, forestry, residential, commercial land, industrial. From this assessment the basis for the future land use plan becomes clearer.

Forest Land Use

According to the U.S. Forest Service 1991 Forest Survey for the Coastal Plain of Virginia, a total of 98,013 acres of commercial forest land are reported for Essex County. This forest ownership is divided between the following groups:

TABLE 1
Ownership of Essex County Forestland

Non-industrial Private		Industrial and Public	
Private Individual	43,883 acres	Forest Industry	16,023 acres
Farmer	28,210 acres	County	385 acres
Private Corporate	9,403 acres	Misc. Federal	109 acres

Most of this reported acreage is sawtimber sized trees with an almost equal amount of seedling and sapling sized trees. These young trees are a direct result of an aggressive reforestation program in Essex County.

TABLE 2
Area of Commercial Forestland, By Stand Size Classes

Sawtimber (Softwoods 9" DBH and over) (Hardwoods 11" DBH and over)	40,994 acres
Pole size timber (5" DBH up to sawtimber)	24,231 acres
Seedling and saplings (up to 5" DBH)	32,788 acres
TOTAL	98,013 acres

The oak-hickory forest type continues to be the predominant timber type in the county although reforestation efforts have increased the pine resource of Essex County.

TABLE 3
Essex County Forest Types

Loblolly/Virginia/Shortleaf pine	34,230 acres
Oak-pine	17,117 acres
Oak-hickory	40,012 acres
Oak-gum-cypress	3,519 acres
Elm-ash-cottonwood	3,135 acres
TOTAL	98,013 acres

A comparison of the average net annual growth with the average annual cut for the past six years shows a slightly higher volume of timber being removed than being grown.

TABLE 4
Estimates Growth vs. Cut

	Sawtimber (Million bd.ft.)		Growing Stock (Thousand cu. ft.)	
	Growth	Cut	Growth	Cut
Softwoods	9.4	5.8	2.2	1.1
Soft hardwoods	8.2	6.3	1.7	1.8
Hard hardwoods	11.0	16.9	2.1	3.6
TOTALS	28.6	29.0	6.0	6.5

This difference is also noted in the comparison of 1991 with 1985 total wood inventories of Essex County:

TABLE 5
Total Wood Inventory by Species Group

	Sawtimber (Million bd. ft.)		Growing Stock (Thousand cu. ft.)	
	1991	1985	1991	1985
Softwoods	203.4	166.8	59,031	49,664
Soft hardwoods	127.9	122.4	45,618	46,713
Hard hardwoods	187.9	237.2	60,904	72,132
TOTALS	519.2	526.4	165,553	168,509

The following information is the Department of Forestry accomplishments for the forest landowners of Essex County during the past five years:

TABLE 6

	1990		1989		1988		1987		1986	
	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres
Forest Management Plans	12	2,233	19	2,043	14	2,577	11	1,068	NA	NA
Seendlings planted	1,100,000	1,780	762,000	1,096	1,037,750	1,041	896,000	1,203	682,100	927
Timber Stand Improvements	32	1,203	16	966	26	1,129	18	807	6	432
Timber Thinned	10	659	3	158	4	301	0	0	0	0
Information & Education	49	0	58	0	34	0	36	0	18	0
Forest Fires	12	4	7	22.4	4	6.4	6	9.7	8	25.4

Essex County's forests are an important timber resource as well as wildlife habitat, watershed protection, outdoor recreation, air quality, and aesthetic beauty. As we begin this new decade and prepare for the 21st century, the forest resource of Essex County will continue to enhance the livelihood of its residents.

Agricultural

Agricultural activities in the County are examined here through a review of the Census of Agriculture; primarily for the years 1978, 1982, and 1987, although trends are also based on the figures reported in the 1969 and 1974 Census. The number of farms fluctuated between 1969 and 1982. In 1969, there were 198 farms; however, this number dropped to 168 in 1974, rose to 200 in 1978, and fell again, slightly to 192 in 1982. During this same period, the total number of acres in farmland County-wide had shown a steady rise although the average size of farms in Essex had risen and fallen over the 1969-1982 period in a manner similar to the rise and fall of the number of farms.

TABLE II-22

Essex County
Number of Farms by Farm Size, 1978 and 1982[1]

Farm Size (Acres)	No. in 1978	No. in 1982	No. in 1987
0 - 10	8	8	3
10 - 49	47	46	21
50 - 179	59	52	47
180 - 499	48	33	25
500 - 999	19	31	24
1000 - 1999	16	18	19
2000 +	3	4	3
Total No. of Farms	200	192	142
Average Farm Size (Acres)	359	426	487

[1] Based on 1978, 1982, 1987 Census of Agriculture, U.S. Department of Commerce, Bureau of Census.

Table II-23 however, reflects a more recent trend comparison for the period 1982 - 1987 and illustrates a substantial drop in both the number of farms from 192 to 142 over the period as well as a reduction in farm acres from 81,794 to 69,188 over the more recent period.

TABLE II-23

CHANGES IN FARM SIZE CHARACTERISTICS

1982 - 1987

ESSEX COUNTY, VIRGINIA

Farm Size (Acres)	1982		1987	
	No. of Farms	Acres	No. of Farms	Acres
1 - 9	8	49	3	26
10 - 49	46	1,277	21	648
50 - 99	25	1,823	24	1,948
100 - 179	27	3,656	23	3,063
180 - 259	10	2,075	13	2,538
260 - 499	23	8,570	12	4,556
500 - 999	31	21,906	24	16,459
1000 or more	22	42,438	22	39,956
TOTAL	192	81,794	142	69,188

Harvested cropland has fluctuated from 26,735 acres in 1969, to 47,656 acres in 1982 and back to 37,017 acres in 1987. Cropland used only as pasture has decreased from 3,808 acres in 1969 to 2,634 acres in 1974, to 1,818 acres in 1982 and only 537 acres in 1987. Woodland on farms increased only slightly.

The market value of agricultural products sold in 1982 at $12,251,000 dropped to 7,412,000 in 1987. Grains, such as corn, wheat, barley and soybeans, account for $10,076,000 of that amount, with livestock ($1,469,000) and other crops accounting for the rest. These other crops include tobacco, potatoes, hay, alfalfa hay, some fruit and vegetables, sweet corn and melons for local retail and wholesale use.

TABLE II-24

Essex County

Agricultural Economic Indicators, 1978, 1982 and 1987

Indicator	1978	1982	1987
(1) Value of Principal Farm Products	$8,778,000	$12,251,000	$7,412,000
(2) Value of Products Sold for Human Consumption	18,000	47,000	NA
(3) Value of Capital Items:			
Land and Buildings	108,758,517	NA	68,570,948
Machinery	8,653,000	10,377,000	11,078,556
(4) Farming as Principal Occupation	99 persons	120 persons	85 persons
(5) Other Occupations, Farm, Part-Time	101 persons	72 persons	57 persons
(6) Average Age of Farm Operator	52 years	52.4 years	52.7 years

Source: Census of Agriculture 1978, 1982, 1987

Farming as a principal occupation had increased from 99 persons in 1978 to 120 persons in 1982 but declined to 85 persons in 1987. Those reporting farming as a part-time occupation dropped steadily during the 78-87 period. Both of these changes are consistent with Agri-business trends in the late 80's. Although employment in agriculture tends to fluctuate, farming is still an important source of local employment and an important part of the local economy. Moreover the non-farmers in Essex County appreciate the rural qualities the industry provides them.

Residential

Residential land uses within the County could at one time be classified as year round or seasonal with relative ease. Much of the seasonal housing is located in the lower half of the County, on or near the shoreline, and during the 80's has been increasingly subject to conversion to permanent housing. Problems associated with this practice are waste disposal, shoreline erosion, and the provision for public services such as water or sewer.

A land use survey, completed in May 1976, was mapped showing the general location and nature of the structures that existed at that time in Essex County. This mapped information was updated in April of 1983 to include structures recorded in the files of the County Building Inspector's Office. These records indicate that approximately 470 dwelling units were added from March of 1976 through April of 1983. More recent review of the County Permit records indicate that from April 1983 thru 1990, another 599 units were added with half the units being Mobile Homes. The average increase in residences for the more recent period is roughly 80 homes annually.

All information indicates that residential development has followed the same pattern as in the past. Subdivision development has continued along the County's waterfront areas; primarily the shoreline just north of Tappahannock and in several areas along the shoreline south of the Town to the County line.

Throughout the rest of the County there are only a few new, small subdivisions as most of the new residential development has continued to be spaced out along the roadways. The pace of residential development has slowed considerably, due primarily to a sustained increase in interest rates and the overall cost of housing. In fact in the first 5 months of 1991 only a few permits have been issued monthly reflecting the condition of the national economy.

These factors also contribute to a rise in the proportion of mobile homes located in the County. Throughout the 80's the number of new permits are distributed almost evenly between mobile homes and all other types of single family dwellings.

Commercial and Industrial

Commercial and industrial development is almost non-existent within the County due to the presence of those activities in Tappahannock. This is not unusual given their need for central sewer and water facilities. A review of the building permit data listing commercial and industrial uses reveals a low level of activity also likely due, in part, to poor economic conditions which are nationwide. The permits listed represent a few smaller convenience stores, sawmills, expansion of an existing greenhouse operation, and limited development in the Bray's Fork area which capitalizes on the location of the Route 17/360 junction.

In 1981 Essex County applied for and secured a Coastal Plains Commission grant enabling the County to have an Industrial Development Program drafted. The resulting study

pinpointed several potential industrial sites within the County and was designed to aid in attracting new business and industry. It and the efforts of the County have resulted in the recent 1989/1990 location of the Canon sub-assembly plant which employs 350 residents in the region and is slated for future expansion. A new Wal-Mart store in the town provides another 160 jobs for the region's work force.

TRANSPORTATION

Highway travel is the overwhelming dominant form of transport of both people and goods. The framework for Essex County's transportation system includes primary and secondary roadways constructed and maintained by the Virginia Department of Transportation.

As has been the case in the past, the private automobile will continue to be the dominant mode of travel in the County throughout the planning period. The key consideration in managing future growth in the County will be the location of improvements to the County highway system.

Although most of the highways in Tappahannock are currently operating at acceptable levels of service, continued growth in the Town and County will undoubtedly require substantial investment in highway improvements within the planning period.

Waterways and airport facility have played a minor role as alternate modes of transportation. However, in recent years use of air forms of transportation have increased nationwide. Moreover, the County has found that improved airport facilities may be prompted to remain competitive in attracting industry and to maintain the role of the community as a commercial center for the eight county region.

Primary Highways

All inter-county traffic and much intra-county travel is dependent upon primary Route 17 and 360 which connect Essex County to surrounding metropolitan and resort areas. These primary routes are dual lane routes throughout the County excepting a portion or reach extending from Bray's Fork to Dunnsville.

Route 17 traffic in both directions has shown substantial increases in traffic volumes in recent years with the greatest increase attributable to higher percentages of truck traffic.

Improvements to Routes 17-360, notably a Town bypass, would eliminate some of the traffic problems associated with the number of vehicles passing through the Town of Tappahannock and is a logical next step improvement given increased traffic (notably truck traffic) in recent years and the past improvements to the 17 corridor to dualize throughout the County in recent years.

The near town portions of the corridors are sufficiently congested to create long delays for area residents making left turn movements to gain access to Route 17 from intersecting town streets.

In 1988 the Virginia Department of Transportation conducted a Route 17/360 corridor study and identified several alternatives for by-pass construction but failed to specify the States' preferred alternative. The Town and County preferred option for its location is

identified in later sections of this plan.

Traffic projections made by the Virginia Department of Transportation (VDOT), (See Table II-25) indicate that the average daily traffic on Rt. 17 through Town will increase from its current level of 22,000 vehicles per day to 30,500 vehicles per day by 2010, assuming no other alternative route is built. Volumes of this degree indicate a need for additional lane capacity on the Town's major transportation artery and/or underscore the need for a town by-pass or alternate parkway within the planning period. Clearly the Town needs to make judicious use of the existing highway system to ensure that the capacity is not prematurely depleted as a result of poor access control, particularly along the major arterial corridors.

Table II-25 shows trends in average daily traffic for this primary route. The average annual percent increase in traffic well exceeds the rate of growth for dwelling units. Many routes have experienced traffic increases of 10 to 17 percent a year. Presently, Route 17 south of Bray's Fork is considered inadequate until this section of the route is dualized. If these trends are projected into the next twenty years, the traffic will exceed those levels for which VDOT is planning.

TABLE II-25

Projected Growth in ADT on Highways Without a By-pass							
Route	From	To	1981 (3)	1988 (2)	% Change	2010 (1)	% Change
Rt. 17	Rt. 360E	NCL Tapp.	6,815	15,230	123.48%	21,790	43.07%
Rt. 17	Rt. 360E	Rt. 617	12,610	22,460	78.11%	30,520	35.89%
Rt. 360	Rt. 17/360	Rich. Co.Ln.	7,585	13,640	79.83%	18,140	32.99%

Secondary Roadways

Utilized mostly for intra-county travel, secondary roadways are of a major importance for rural areas in transporting farm products and equipment, timber to mills, residents to work and services and tourists to waterfront areas. Several of the roads in the County secondary system serve a great deal of inter-county travel to Tappahannock for employment and services.

The condition of secondary roadways in Essex County is reasonably sound with on-going program of expansion, improvements and maintenance being carried out by the Virginia Department of Transportation. The County has adequate opportunity for recommendations for highway improvements in the Highway Plan for the secondary roadway system developed and revised by the State Highway Department annually. Recent traffic counts indicate the airport road which serves both the County and Town is at capacity and should be planned for upgrade in the near term depending on how its traffic volumes may be influenced by a Town bypass.

Mass Transit

Essex County is served by one bus line (Greyhound) which provides intercity travel service. No other form of mass transportation exists. Bus traffic has decreased with increases in auto ownership and use. It is unlikely that this service will be expanded within the planning period.

Little potential exists for providing a County transit system although the County does have a segment of its population which is transportation disadvantaged. Special programs could, by established route, serve scheduled functions in portions of the County, if financially supported, but the distance from Supply to Laneview combined with the very low ridership of a very rural population precludes any cost-effective County-wide system.

Waterways

Travel on the Rappahannock River is limited to private pleasure craft and some commercial grain transport. A public wharf was rebuilt in the early 80's and is maintained in Tappahannock by the Virginia Department of Transportation. Navigable waters do have potential for expanded shipping and transportation in the future.

Railways

No railroad passes through Essex County. West Point, Bowling Green and Fredericksburg are the nearest available stations, Fredericksburg having the only complete rail services.

Airways

Tappahannock Air Service operates the airport located adjacent to the industrial area within the Town limits. The 2800 foot paved runway includes some limited overrun extension. Flight training, rentals and charter services are available as well as tie downs for private craft. Primarily the facility is utilized by private individuals, transients for fuel stops and local businesses and industries. Although the location is convenient to area industry, it offers no potential for future expansion of the airport facilities, given the pattern of surrounding town development.

COMMUNITY FACILITIES AND PUBLIC SERVICES

Citizen tax dollars support a variety of public services provided to Essex County Residents. Conveniently, almost all are located in and around the Town of Tappahannock. Services attract population and commerce, but often lack of facilities and services does not deter growth. When growth and development exceed the capacity of services, a burden is placed upon the citizen tax dollar to meet the service and facility requirements. Often this situation forces abandonment of County programs not considered absolute necessities in order to provide the most basic services and maintain a quality of life suited to the Essex County population.

Analysis of existing services and facilities and projection of need based upon population and economic data can assist in anticipating what additional services and facilities will be required in the future. In this way, necessary appropriations from the budget can be anticipated in advance.

Health and Welfare

Essex County has a variety of types of medical services available to it. In private practice and/or affiliated with the hospital there are over thirty doctors. These include family practitioners, surgeons, radiologists, internists, obstetrician-gynecologists, cardiologists, ear-nose-throat specialists, dentists and optometrists. Prescription medicines are available through three pharmacies located in Tappahannock. Riverside Tappahannock Hospital located in Tappahannock is a one hundred bed facility offering X-Ray, Nuclear Medicine, Laboratory, Physical Therapy and Respiratory Therapy services. The surgical suite can handle major surgery and complicated orthopaedic surgery. Physician specialties utilized in the hospital include Family Practice, Internal Medicine, Emergency Medicine, General Surgery, Cardiology, and Orthopaedic Surgery. The Emergency Department is well equipped to treat all types of injuries and is staffed 24 hours each day by an Emergency Room Physician.

Tappahannock Manor, a one hundred twenty eight bed convalescent care and home for adults facility, opened in 1977. The nursing home employs eighty five full and part-time workers and is operating at approximately 96% occupancy.

In addition to private medical services, the County Health Department, located in Tappahannock, holds regular X-ray, family planning, child health, obstetrics, Medicaid and immunization clinics. The Health Department also provides expertise in planning and approving individual sewage systems, testing private water supplies, inspecting food selling establishments as well as assisting with rabies control. State and locally funded, the Health Department operates on an ability-to-play basis serving those County residents unable to afford private care.

Social Services are provided by the Essex County Department of Social Services located also in Tappahannock. Staffing includes a director, two social workers, three eligibility workers and three clerks. The department administers the food stamp, auxiliary grants for the aged and disabled, general relief funds, Aid to Families of Dependent Children, child protective services, foster care and numerous services through Title XX Funds.

Safety and Emergency Services

The Sheriff's Department, located in Tappahannock, is staffed by the Sheriff and ten officers. The department operates nine (9) automobiles and one van, all of which are radio equipped. The department cooperates with other counties in the Middle Peninsula in minimum classroom and on-the-job training and in emergency services operations. An addition to the original building houses six offices. The Town employs an additional 5 officers through its police department and five state police are assigned to the Town/County area.

A single volunteer organization, the Tappahannock-Essex County Volunteer Fire Department serves Essex County from a new facility located in Tappahannock. The Department of fifty four members is equipped with a 250 gallon mini-pumper, two 500 gallon pumpers, two tankers, 1500 gallon and 2500 gallon, a portable pump as well as one hook and ladder truck. Traveling as far as 21 miles to either end of the County, with no satellite stations, the fire department averages twenty calls per month, consistently throughout the year.

The County-Town Rescue Squad is composed of thirty-seven members operating four (4) rescue vehicles and a boat. Office records show an average of fifty-five calls per month during recent years. The units are dispatched county-wide from the County Sheriff's Department. This unit, as well as the fire department, operates primarily from private donations.

Education

The Essex County School Board operates a consolidated public school system at three sites in Tappahannock. The following table (Table II-26) shows the facilities by function, enrollment and staffing for 1991.

TABLE II-26

	Enrollment	Teachers (Includes Librarians)	Admin. Staff
K-4 Tappahannock Elementary	560	35	2
5-7 Essex Intermediate	351	25	1
8-12 Essex High School	561	46	2

Student enrollment for the period 1980 to 1991 (Table II-27) reflects a generally stable enrollment pattern through the period.

TABLE II-27

STUDENT ENROLLMENT 1984 - 1991						
84-85	85-86	86-87	87-88	88-89	89-90	90-91
1,501	1,477	1,497	1,477	1,464	1,485	1,472

PUPIL-TEACHER RATIO 1988 - 1990						
		1988			1990	
		Essex	MPPD		Essex	MPPD
Elementary		15.0	15.0		15.2	15.6
Secondary		11.1	13.3		12.2	13.0

The following table shows the number of private schools serving Essex County and the range in grades each provides instruction:

Aylett Country Day School - Early Childhood 3 yr. olds - Grade 8

Saint Margaret's School - Grades 8 - 12

York Academy - Grades K - 12

Tappahannock Junior Academy - K - 7

As the population change factors indicated earlier, a decreasing rate of natural increase in the late 1980's, accounts for a modest projected decrease in school enrollment. Migration may be increasing somewhat presently, but the pre-school aged population decrease shown earlier further indicates a continuation in the trend of decreasing school enrollment at least for the next 4-5 years. The increase in population of the child-bearing age may cause a temporary increase in the five to fifteen year range later in the planning period, yet decreasing family size should tend to offset this factor.

A new primary school facility was completed in 1978 which has improved educational facilities for grades kindergarten through third, leaving the existing school building for office space for County Government. In 1974 a vocational addition to the high school was made, bringing its curriculum facilities to the desired level. Classroom renovations were completed in the Intermediate School in 1982 which has provided for efficient modern school facilities throughout the Essex Public School System, while providing better meeting space to supplement the offices of County Government.

Library

The Essex Public Library is operated by the County in a facility located in the old elementary school complex on Route 17 North of Tappahannock.

The library contains 17,000 volumes and is funded primarily by the County. Some additional funding comes from the Town of Tappahannock, the state, federal grant-in-aid monies and private donations. The Library is presently housed in 2500 sq. ft. of space which may require expansion in future years.

Recreation

The vast amount of waterfront has built enthusiasm from Essex County residents and tourists for water sports and activities. Although there are no public parks or beaches on the waterfront, there are several public landings along the Rappahannock for launching boats. A small park in Tappahannock provides picnic facilities as well as a wayside station

on north Route 17 which is maintained by the Virginia Department of Transportation for motorists.

Camping facilities are available at Hunter's Mill Lake Campground with 22 sites operating from 30% in the off-season to 75% capacity during the summer months and weekends. Marina facilities at Bowler's Wharf offer 132 slips and operate at 95 to 100% capacity. Slips are also available at June Parker Marina in Tappahannock.

The County operates a Department of Parks and Recreation utilizing the swimming pool, gym and two lighted ball fields for organized sports and recreation activities. Their programs include volleyball, flag football, basketball, after-school primary level activities, weekend youth activities, parades and open gym activities.

Exploration of public waterfront areas for use by the general public has been supported from time to time, and was supported by citizens based on the County survey distributed in 1990. However, study must be given to whether a facility of this nature would best be operated publicly by the County or if a private venture would be more feasible and to ascertain the specific facility improvements that residents would most likely desire and support.

Waste Disposal and Public Utilities

Waste collection and disposal operations in Essex County are carried out by County employees under the authority of the County Administrator. The County owns and operates a 450 acre landfill, with two full time workers and one part time. Equipped with two Mack compaction trucks, a loader and 4 convenience/recycling centers scattered throughout the County, refuse is collected daily and covered daily at the landfill. The facility is scheduled for closure in 1994 with waste disposal to be handled through the Regional Public Service Authority.

The only public water and sewer facilities offered in Essex County are located in the Town of Tappahannock. The County owns two water systems at schools which are now no longer in use. Many of the private subdivisions have central water supplies owned and operated privately. The largest of these include: Gwynnfield, Maryfield, Coleman Island Beach, Point Breeze, Markhaven Beach, Essex Acres, Laurel Park, Wilson Acres.

Government Services

In addition to the services already mentioned, the Essex County Government includes a building inspection program with a full-time building official-zoning administrator and an administrative staff. All offices are currently located in or adjacent to the County Courthouse. The addition of local programs and services is not expected at this time and total space is presently adequate for those programs administered. However,

reorganization of office space by function allowing centralization of County offices is an ongoing need.

Public facilities anywhere are costly to provide and operate in a rural county. The problems are more pronounced due not only to a lower population and revenue, but the lack of concentrated development pattern. This means the people must travel further to services or the services must travel further to the people. This is expensive and often results in decreased services.

Land use regulations can promote community development and inhibit scattered stripping of residential and commercial uses. In this way, services can be localized; fewer centers serving more people is more efficient and less travel for routine or emergency services conserves energy.

The future land use plan, in coordination with public services and facilities planning, must address needs with respect to location of development and the provision of services at least cost.

THE ECONOMY

This chapter of the Comprehensive Plan focuses on the economic indicators of community growth and direction of resulting change in Essex County and the Town of Tappahannock, and ways in which these directions both influence and may be influenced by public policy.

This analysis was performed as a series of tasks starting with the identification of principal locational and regional factors that have and will continue to influence the local economy. Basic transportation routes link Essex and Tappahannock to other market areas. The general trade area is delineated as served by retail establishments centered at Tappahannock. The relationship of the area to other urban communities in the Virginia urban corridor is also defined.

Locational and Regional Factors

An important feature of the local economy is its proximity to about 3.5 million people living in the "urban corridor."[1] The relationship of Tappahannock and Essex County to this corridor as well as the major transportation routes is shown on the following page.

The Town of Tappahannock is a natural regional center because of its strategic location at the junction of Routes 17 and 360. Its Rappahannock bridge location centers the Town to serve substantial areas of the Northern Neck and Middle Peninsula regions. The greater trade area served by the town includes all or part of eight counties. The eight county area (listed in Table II-28) had a total population of 89,671 persons and reported receiving $2,077,619.51 in local sales tax in 1980. Essex County comprised 11% of the population in this area in 1980, but reported receiving 22.8% of the sales tax or $473,678.83 in the same year.

The County population in 1990 of 8,689 residents now represents only 9.8% of the eight county and regional population which has grown to 89,671. Nevertheless, the same 1% local sales tax has grown substantially through the 80's to over 3/4 of a million dollars annually. Table II-29 reflects a growth rate in the 1% sales tax from the period 1984/85 to 1987/88 of over 20% in only 4 years. The table also shows the Essex receipts per capita in 1989 were double that of other counties in the Middle Peninsula Planning District

[1] Clarence R. Jung, Jr., Virginia's Urban Corridor, Virginia Electric and Power Company, 1971

Location and Trade Area Map

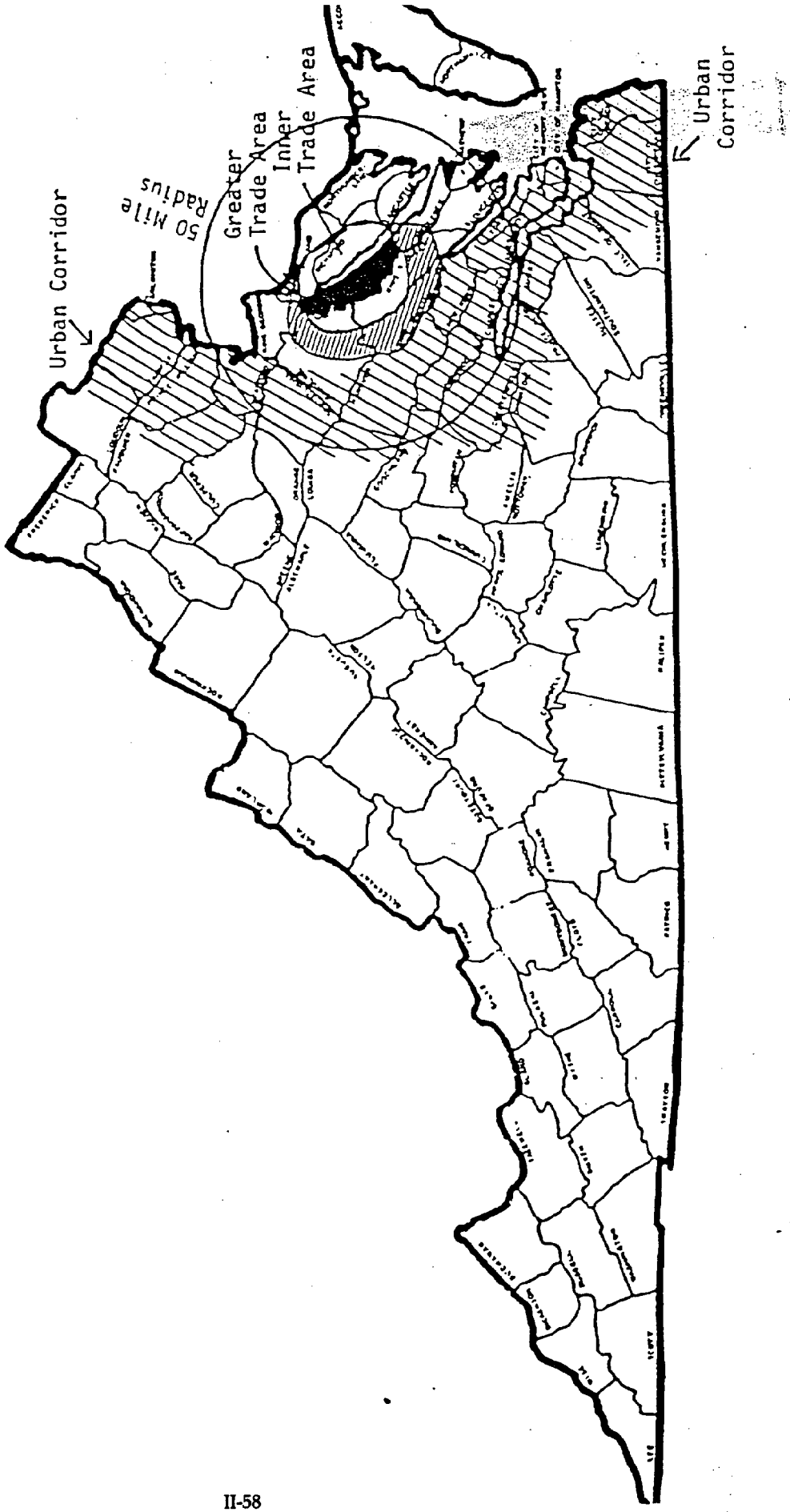


TABLE II-28				
	Local 1% Sales Tax		Population	
Counties	1980	1989	1980	1989
Westmoreland	304,537.58	432,660	14,041	15,448
Richmond	306,537.58	419,520	6,952	7,269
Middlesex	217,588.48	304,290	7,719	8,634
King and Queen	38,286.99	57,520	5,968	6,287
King William	278,427.96	467,270	9,334	10,893
Caroline	284,850.07	488,970	17,904	18,966
Essex	473,678.83	766,050	8,864	8,689
King George	173,577.71	40,093	10,543	13,485
TOTAL	2,077,619.51	2,996,373	81,325	89,671

Source: U.S. Bureau of the Census, Census of Population: 1980, Vol 1 Characteristics of the Population, Pt. 48, Virginia; and the Commonwealth of Virginia, Department of Taxation Annual Report 1980 - 1981.

TABLE II-29			
Sales Tax Distribution, FY 84-85, 85-86, 86-87, and 87-88			
	Total	Share of State Tax	Local 1%
84 - 85	$1,132,421	$532,546	$599,875
85 - 86	$1,079,782	$496,176	$583,606
86 - 87	$1,254,871	$596,917	$657,954
87 - 88	$1,364,869	$640,646	$724,223

Taxable Sales, 1987 and 1989				
	1987		1989	
	Sales ($1,000)	Per Capita	Sales ($1,000)	Per Capita
Essex	$ 66,578	$7,481	$ 76,605	$8,512
Gloucester	109,760	3,878	117,404	3,837
King & Queen	5,136	428	5,752	913
King William	36,374	3,531	46,727	4,408
Mathews	20,688	2,351	21,871	2,485
Middlesex	29,812	3,427	30,429	3,498

Sources: Virginia Department of Taxation

The Travel Industry

Tourism is increasingly playing an important role in the County economy. The travel industry provides employment and tax benefits with substantial dollars spent by travelers circulating through the local economy. Table II-30 reflects growth in this industry for only a 2 year period during which time 7 jobs were added to the local economy and a $5,000 gain in tax receipts occurred.

TABLE II-30				
Expenditure by Travelers, 1985 and 1987				
	Total	Payroll	Employment	Local Tax Receipts
1985	$3,442,000	$644,000	70	$32,000
1987	$4,299,00	$733,000	77	$37,000

Source: U. S. Travel Data Center

Employment and Income

Figures indicate a steady increase in County employment thru the period 1980 to 1987. The period reflected a 13.3% rate in employment growth. Average wages for 1987 were $12,567.00.

TABLE II-31

Employment And Average Wage

1980	1881	1982	1983	1984	1985	1986	1987	Average Wage, 1987
3,516	3,436	3,402	3,548	3,568	3,675	3,797	3,985	12,567.00

More recent statistics indicate employment levels jumped appreciably from 1987 to 1990. (See Table II-32) The Virginia Employment Commission indicates that by February 1990, the employment level reached 4516 in Essex. This represents yet another 13.3% increase in only a three year period. Over the full ten year period (1980-1990) County employment increased by 28%.

TABLE II-32

Labor Force, Employment, Unemployment, 1989-1990

	Labor Force	Employment	Unemployment	Rate
May 89	4,474	4,321	153	3.4%
Sep 89	4,462	4,306	156	3.5%
Oct 89	4,495	4,311	184	4.1%
Jan 90	4,806	4,498	308	6.4%
Feb 90	4,874	4,516	358	7.3%

Table II-33 provides a breakdown of employment in the County by industry type in 1980 and 1988. Although Census data is not yet available to permit 1990 comparison it is clear from review that growth in employment levels in the County were substantial for the period particularly when modest population decline was evident for the same period.

TABLE II-33

EMPLOYMENT BY INDUSTRY
ESSEX COUNTY AND VIRGINIA 1980

	1980	1988
Employed Persons 16 Years & Over	3,861	4,556
Agriculture, Forestry, Fisheries, and Mining	258	285
Construction	526	265
Manufacturing Nondurable Goods Durable Goods	786 328 458	904 364 540
Transportation	83	114
Communications & Other Public Utilities	75	79
Wholesale Trade	103	83
Retail Trade	681	1,092
Finance, Insurance & Real Estate	154	239
Business and Repair Services	127	146
Personal, Entertainment & Recreation Services	231	301
Professional and Related Services Health Services Educational Services Other Professional & Related Services	685 218 368 99	880 386 382 112
Public Administration	152	168

Source: U. S. Department of Commerce, Bureau of the Census, Labor Force Characteristics, 1980, PHC80-2-48, and Bureau of Economic Analysis Regional Economic Information System, 1990

The recent location of the Canon Plant (Southtech) may account for an additional 300 jobs in the 1987-90 period.

The Census of Business and Industry "County Business Patterns, 1987" indicates retail trade jobs increased to 1,092 in the County from 681 in 1980. This represents an increase of 60% in the 7 year period. Health services employment alone increased from 218 in Essex in 1980 to 386 in 1990; an increase of 77%.

While these sectors of the County job base grew substantially, manufacturing employment in the 1980-87 period grew only by 17%.

Major employers presently in the County are shown on Table II-34.

TABLE II-34

MAJOR EMPLOYERS		
Firm	**Product/Service**	**Employees**
H. Warshow & Sons	Garments	360
Quality Automotive Corp.	Brake Shoes	168
U.S. Auto Manufacturing	Brake Shoes	83
Farm Fresh	Groceries	68
Lowery's Restaurant	Food Service	85
Southside Bank	Banking	60
Tappahannock Manor	Retirement Home	88
Riverside Tappahannock	Hospital	195
Shoney's	Food Service	40
McDonald's	Food Service	40
Food Lion	Groceries	42
Roses	Retail	90
Southtech, Inc.	Sub-assembly parts for copieers & printers	350
Bank of Essex	Banking	40
Wal-Mart	Retail	160

Commuting patterns serve as a useful means of determining the extent of dependency on other jurisdictions for employed persons' income. The following figures represent an estimation of the number of commuters in Essex County based on the civilian labor force data from the 1980 Census. The determination was made by subtracting covered employment and self-employed from the civilian labor force figure. The resulting figure represents people who travel outside their jurisdiction for employment.

TABLE II-35
ESSEX COUNTY COMMUTERS

Civilian Labor Force	Covered Employment	Self Employed	Commuters	Commuters as %Labor Force
3,997	2,480	361	1,156	28.9%

Source: 1980 Census

PLACE OF WORK

In County	Outside County	Outside State	Not Reported
2,277	980	65	485

At this time there is a lack of specific information regarding the number of commuters and their points of origin who travel into the County for employment. The figures above indicate that a significant number of County residents do travel to points outside Essex County for employment, although the number of commuters is a much lower percentage than those of neighboring counties. In the past, Essex County and the Town of Tappahannock have been a center of trade for several of the surrounding rural counties. The employment and commuting figures tend to support the assumption that this trend will probably continue for some time.

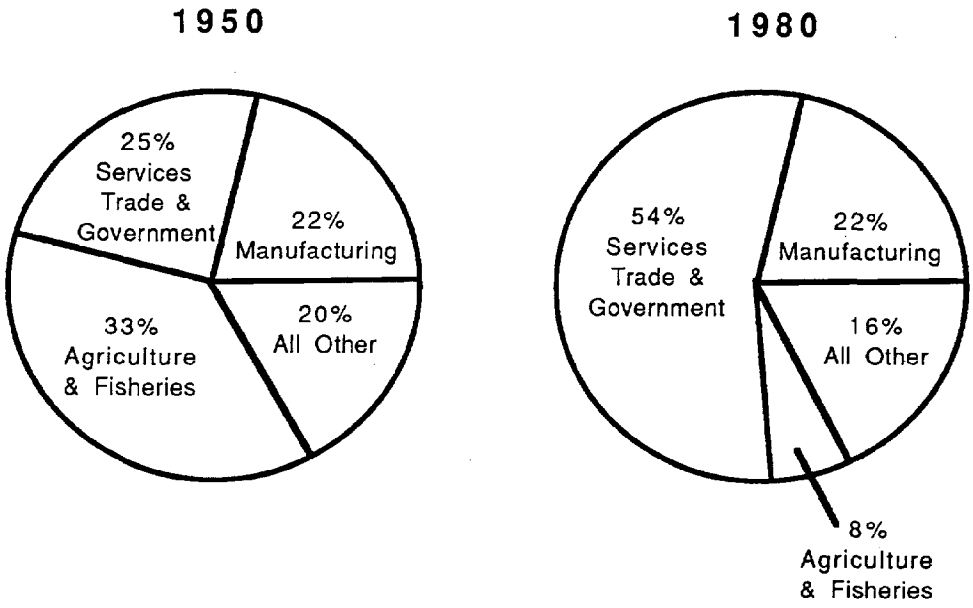
Summary

Essex County and the Town of Tappahannock continue to serve as a regional trade center. Due to its geographic location and the development that has occurred over the last two decades, this should remain true for some time to come.

The economic outlook for Essex County is good over the next few years. The number of local jobs has shown a steady increase in proportion to the population. Growth should

continue in retail trade, finance, insurance, real estate, service industries, lumber and wood products. Agriculture, forestry and fisheries have demonstrated a decrease, and although they are still only a small portion of the total local employment, they are important to the local economy and should be encouraged.

Change in Employment



Planning Management Associates prepared an Industrial Development Program for Essex County in FY 81-82. To illustrate the change in employment patterns in the County from 1950 to 1980, they include the figure above with the following statement:

"Today, manufacturing, trade, and services, the trademarks of an urban economy, dominate the County's economy. Jobs in trades and services comprise over half of all County employment while manufacturing jobs account for another one-forth of the local employment. Agricultural employment, which engaged 33 percent of the labor force 30 years ago, now employs less than 10 percent."

Local employment has shown a steady increase in comparison to the population and this trend is expected to continue.

Given the Town's role as a County seat and the County/Town location with a service area population in 1990 of over 88,000 residents the County employment picture should remain a healthy one. Continued retail and services job growth should be expected given these characteristics. The new Wal-Mart alone will provide 160 new retail industry jobs.

County efforts however, may be required to maintain the balanced job base evident in the past. (See Table II-33) Manufacturing employment will not as naturally occur with residential growth as retail and services employment. Continued efforts to attract industry to support the objective of maintaining diversity in the job base will likely be required.

PART III.

PLAN GOALS & OBJECTIVES

PLAN GOALS AND OBJECTIVES

The purpose of the following section is to establish direction and guidelines for future growth and development in Essex County. In order to achieve this purpose, county citizens have established the goals and objectives set forth in this section.

A goal is a general statement of some desirable future situation or condition toward which to strive. An objective is a more specific action to be undertaken in order to help achieve a goal.

A policy is an official course of action, established through the political process, which is intended to serve as an official guide for any public or private decision affecting growth and development in the County. It is the responsibility of the governing body to establish policies and make policy decisions toward meeting the goals and objectives of this comprehensive plan.

The goals and objectives which follow should be read with several points in mind. First, the word "County" refers to the citizens, their elected and appointed representatives and government officials, and local government agencies and offices. Second, the goals and objectives are not regulatory statements or requirements, but rather expressions of what County citizens wish to achieve in the coming years. Third, the word "shall" as used in the goals and objectives is mandatory only in the sense that County citizens require that efforts be made to achieve the goals and objectives. Fourth, the goals and objectives are not absolute, that is, it is not essential that all the goals and objectives be achieved within a set period of time. They need only be achieved if feasible. Finally, these goals and objectives must be considered flexible and adjusted should market conditions or forces not anticipated be brought to bear and require adjustment in their application.

With the foregoing considerations in mind, the following goals and objectives are hereby established for Essex County. They will serve as a guide for all future growth and development and for any individual, corporation, or agency operating in the County.

The overriding goal of the Essex County Comprehensive Plan is to:

Continue protecting the rural nature of the county through careful management of the natural resources and control of future development, at the same time allowing for moderate growth in the economic base and job supply.

In support of this overriding goal several Goals and Objectives have been developed to correspond to various aspects or components of the Comprehensive Plan. The following pages identify specific plan goals and objectives for a wide variety of aspects of County life and serve to guide the preparation of future plan elements in Part IV as well as decisions to be made over time concerning development and provision of services necessary to support it.

GrowthManagement & Land Use

Goal:

Guide future development into an efficient and serviceable form which is protective of the County's predominantly rural character.

Objectives:

- Direct the majority of future County development to areas already or proposed to be served with adequate public facilities such as sewer, water, roads, schools, etc.
- Limit future suburban sprawl in rural and agricultural areas where adequate public facilities do not exist or where their provision would not be cost-efficient.
- Conserve farmland, forested areas, open space, and rural character.
- Discourage growth in areas with significant natural development constraints such as environmentally sensitive areas and natural resource areas.
- Discourage strip development (Commercial and Residential) along County roads and highways for both traffic safety and aesthetic reasons.
- Plan for adequate public facilities to be in place or proposed prior to development approval, regardless of where the development is located.
- Provide land areas for balanced future commercial and industrial development in locations which are compatible with existing and planned residential development.
- Require that future growth pay a "fair-share" of the associated costs for additional public facilities and services for which new development generates demand. Public Services necessitated by new development and designed primarily for the benefit of new development shall be provided by the developer.
- Improve the quality of future development and redevelopment through improved site planning and design standards.
- Coordinate County growth management plans with plans and policies of the incorporated Town of Tappahannock, and adjacent Counties.
- Preserve the unique character of the County's many existing rural villages and crossroad settlements.

Transportation

Goal:

Provide for the safe and efficient movement of people and goods throughout the County.

Objectives:

- Plan roadway development to support and enhance the Comprehensive Plan and Future Land Use Plan.
- Cooperate with and actively provide input to the State Department of Transportation in developing highway plans for the benefit of the County.
- Maintain and improve existing transportation facilities efficiently to meet increased demand.
- Support the Town of Tappahannock's proposal to establish a Route 17/360 corridor Bypass.
- Require development to pay its "fair share" of the costs associated with the resulting increased demand on transportation facilities.
- Develop a circulation system that encourages the separation of through traffic from local traffic.
- Require that subdivision roads be planned, constructed, and maintained according to County and State Department of Transportation standards.
- Encourage limited access management along principal corridors; discourage strip development on secondary roads.
- Preserve and enhance opportunities for greater industrial use of the County's airport facilities and improvement of airport facilities to support economic development objectives.

Community Facilities & Services

Goal:

To provide a system of community facilities, public services, and utilities that is consistent with citizens' needs and well-being and that encourages a form of development consistent with the Land Use Plan.

Objectives:

- Maintain and improve public services and facilities to meet the needs of citizens of the County. These services and facilities include

schools, health facilities, solid waste collection, emergency medical and rescue services, police and fire protection services and public library facilities.

- Encourage development of Parks and Recreation facilities to serve the needs of County residents. Explore opportunities to provide greater public access to the river and creeks.
- Encourage adaptive and shared use/reuse of community facilities by two or more government agencies and by public and private sectors.
- Review the performance and effectiveness of existing services and public facilities and proceed with changes or expansion as necessary.
- Coordinate efforts with the Town of Tappahannock to meet the Sewer and Water facility development and improvement needs of the Town and surrounding County areas.
- Develop needed facilities in a cost-effective manner, such as giving priority to expanding facilities rather than creating new facilities whenever possible.
- Ensure that the costs of additional public facilities and services required by new development is equitably borne by those benefiting.
- Direct growth into efficient and serviceable form to permit creation of efficient public facility or utility service areas and to minimize the tax burden on local residents and businesses.
- Develop a Capital Improvement Program and annual Capital Budget to satisfy projected facilities and service needs and to permit acquisition of sites of proper size and location for facilities in advance of development.
- Encourage recycling and reuse of refuse.

Natural Resources & Environmental Quality

Goal:

Protect and Enhance the natural resources and environmental quality of the County through measures which protect the County's natural resources and environmentally sensitive lands and waters.

Objectives:

- Protect and improve the water quality of the Chesapeake Bay and its tributaries through the establishment of Resource Protection and Resource Management areas in compliance with the Chesapeake Bay Preservation Act.
- Protect and conserve groundwater resources within the County.

- Protect important tidal and non-tidal wetland resources within the county.
- Conserve forest resources within the County while supporting the timber harvesting industry as an important component of the County economy.
- Protect the important natural function of floodplains within the County by limiting disturbance caused by development activity.
- Preserve County shorelines by protecting against shoreline erosion.
- Minimize runoff and sedimentation associated with agricultural and development activities, particularly in areas with steep slopes.
- Protect important plant and wildlife habitats within the County.
- Coordinate environmental quality protection efforts with future opportunities to establish public parks, natural recreation areas, and open spaces.
- Improve environmental quality on a site-by-site basis through the establishment of performance standards for environmentally sensitive development.

Economic Development

Goal:

Diversify and expand the County's economic base to provide a broad range of business development and employment opportunities within the framework of the County's overall growth management and land use goals and objectives.

Objectives:

- Strengthen local business/industry retention efforts and assist existing businesses and industries to expand within Essex County.
- Preserve the tradition of agricultural, forestry, fishing and shell fish industries as important components of County rural character and for the jobs they provide.
- Attract new and relocating businesses and industries to Essex County which complement the County and its existing economic base and provide high quality jobs for residents..
- Continue encouraging efficient and attractive commercial development to strengthen the County's economic base, and provide both jobs and services for County residents.
- Provide an ample supply of appropriately zoned land areas suitable for future industrial and commercial growth.

- Work closely with the Town of Tappahannock in attracting quality commercial and industrial business which support the Town's role as a recognized center for business and industry in the County and Region.
- Assign priority to the adequate provision of infrastructure to areas designated for future industrial and commercial development (i.e. roads, water, and sewer systems).
- Ensure that future commercial/industrial development is located, designed, and built so as to be compatible with, and minimize impact on, surrounding residential development and the rural character of the County.
- Ensure that future commercial/industrial development is located, designed, built, and operated so as not to degrade the County's natural environment.
- Promote additional tourism/travel industry related development which complements the rural, scenic, and historic qualities of the County.

Housing & Community Development

Goal:

Provide residential areas that offer a variety of housing densities, types, sizes, costs, and locations to accommodate existing and future needs of County residents of all ages, incomes and family sizes.

Objectives:

- Encourage Planned Unit Development form rather than lot-by-lot subdivisions to provide functional and balanced structure for development and a viable tax base.
- Improve housing opportunities for lower income segments of the population.
- Seek Federal support to provide assistance to upgrade existing housing that is deficient in plumbing and sanitation facilities.
- Direct mobile home development to approved parks and subdivisions.
- Seek Federal support to rehabilitate or remove substandard housing.
- Protect residential neighborhoods from incompatible activities and land uses.
- Preserve historic and/or architecturally significant buildings, homes, and properties.
- Locate higher density residential development in proximity to the

availability of employment, commercial services, public utilities and facilities, and transportation routes.

- Foster land use patterns that reduce per unit land costs and encourage flexibility in housing types.

Parks, Recreation & Open Space

Goal:

Develop and implement a comprehensive recreational program to ensure adequate open space, park and recreational areas and facilities to serve the leisure time needs of present and future citizens.

Objectives:

- Coordinate expansion of recreational facilities with the County Land Use Plan such that facilities and residential development coincide.
- Plan community facilities with the capability of adaptive and shared use/reuse (e.g., convertible schools, school libraries and County branch libraries, and multi-use public auditoriums) by two or more government agencies and by public and private sectors. Recreation centers should be planned in new school construction.
- Provide adequate waterfront access to meet the recreation needs of current and future County residents;
- Develop needed facilities in a cost effective manner such as giving priority to expanding facilities at existing locations rather than creating new facilities and/or new locations.
- Ensure that the costs of additional public recreational facilities and programs prompted by new development are equitably borne by those benefitting.
- Coordinate natural resource protection efforts with future opportunities for County park, open space and recreational land uses.
- Seek Federal and State assistance to secure both community park sites and facilities at a scale necessary to meet present and future County resident needs.

Rural Character & Agricultural Preservation

Goal:

Protect the land resources necessary to support the County's agricultural and timber harvesting industries and maintain and enhance its rural character.

Objectives:

- Limit future development in rural areas of the County where public facilities and services are not in place and direct the majority of future growth to those areas of the County where services and facilities are either already adequate or could be constructed efficiently.
- Limit consumption of land for residential development in agricultural areas using density limitations and clustering techniques.
- Maintain the existing character of rural villages and crossroad settlements.
- Preserve the County land base of productive agricultural soils in rural areas for farming.
- Manage and maintain forestland resources in the County.
- Minimize the conflicts which can occur between farm activities and residential development. Establish provisions in the Zoning Ordinance which support the farmers "right to farm" in the Agricultural Preservation and Country-side plan districts.
- Provide opportunities for agricultural support services/businesses in rural areas in order to foster continued farming operations.
- Encourage the implementation of soil conservation and water quality management plans on all farms in the County.
- Support economic development programs which facilitate diversification of the Agricultural economy and products, enhance farm product marketing or in other ways assist farmers to maintain an economically viable industry.

Historic & Cultural Preservation

Goal:

Preserve and enhance the County's rich cultural and historic heritage.

Objectives:

- Cooperate with historical societies in preserving and utilizing historic buildings or areas in the County.
- Maintain and enhance mechanisms for preservation of significant and important historic sites, properties and structures.
- Provide opportunities for public and County resident interaction with historic and cultural influences to enhance their appreciation of these qualities of County life.

Intergovernmental Cooperation and Continuing Planning Process

Goal:

Encourage citizen participation in County planning efforts and coordinate planning efforts with the Town of Tappahannock, adjacent Counties and the Middle Peninsula Planning District Commission.

Objectives:

- Support and participate in regional planning initiatives which benefit the County and facilitate achievement of County Goals and Objectives.
- Work more closely with the Town in planning for development adjacent to Tappahannock.
- Encourage public participation in planning and decision-making processes to assure resident values and interests are reflected in public policy. Utilize citizen surveys as part of the periodic Comprehensive Plan review process.

PART IV.

THE COMPREHENSIVE PLAN

FUTURE PLANNING CONSIDERATIONS

Introduction

On the surface, concerns about growth might be called into question in a County which appeared to lose population in the past decade. According to the U.S. Census Bureau, the County population declined from 8,864 residents in 1980 to 8,689 in 1990. However, during the same period the number of occupied homes or housing units increased from 3,040 in 1980 to 3,258 in 1990. The decline in population by approximately 200 residents in inverse proportion to growth in occupied homes by roughly 200 households is a function of decreasing household size in the County. Demand for public services, sewer and water facilities, and transportation improvements are more a function of the number and distribution of households than population. Therefore in Essex County, there is certainly a basis for some concern about financing the improvements and services needed to respond to growth through a corresponding growth in County revenues. That concern is primarily related to the fear that current residents will have to pay for growth. Based on the issues identified by the Planning Commission, there is some indication that future growth in Essex County could exceed the County's and State's ability to provide certain services. These include, most notably, transportation system improvements (particularly a Tappahannock Bypass) and sewer and water facilities. In both cases the fate's of the County and Town are intertwined. Given the modest growth projected for the County, these costs should be manageable. However, proactive measures to assure their manageability are in order.

Clearly, there is a real need to coordinate land use decisions in order to efficiently extend sewer service. Thus, coordinating land use planning with transportation improvements and sewer and water service extension is a primary objective of the plan. Also of concern is the provision of sewer service outside the current town service area in a manner that is manageable and mutually acceptable to both the County and Town. Improving public recreation facilities rank high among County residents based on a 1989/90 survey of their interests. Lastly, the desire to preserve the County's traditional industries (i.e. agriculture) and rural character is a closely related issue. All three of these needs require a means of directing the location of future growth and development within Essex County.

The cost of providing services is important, but is only a part of the problem. The provision of sewer services has been a traditional method of controlling growth, which requires a commitment to providing these services. A second related issue is the need not only to expand services to keep pace with the new development, but also to upgrade the level of service. For example, Essex County, like most rural counties, has relied on volunteer fire and ambulance services and State and Federal funding for water, sewer, and school facilities. As a rural county grows, it eventually reaches the point where a different and higher level of service is often demanded by the new residents, as well as a more responsive funding mechanism. All of these development related costs must be paid for, and the question of who pays is an issue upon which most citizens and elected officials have focused their attention. This is particularly true as Federal & State funding support

is increasingly unreliable given their financial condition.

Population Trends & Projections

What are the dimensions of growth faced by Essex County Residents? In this section, we have outlined the basic assumptions about the growth that the Essex County Comprehensive Plan must accommodate. The amount, distribution, and timing of population growth and development will influence many decisions to be made concerning implementation of the plan.

The 1980 and 1990 Census comparison indicates Essex witnessed a modest decline in population during the 10 year period. At the same time, a corresponding increase of about 200 households occurred.

A review of Building Permits for residential construction during the same 10 year period indicates that 732 permits for new homes were issued during the decade. Almost one-half of these permits were for mobile homes. 60% of all permits issued were issued in the period 1986 to 1990 indicating somewhat greater development activity in the second half of the decade.

Table IV -1 shows the building permit activity for the decade by type of construction. It is difficult to ascertain the actual distribution of development in the County in the past 10 years. Although 1990 Census results are not yet available to confirm it, it is likely the Central Magisterial District received the largest percentage of new construction given the availability of sewer and water facilities, the role of the Town as a regional center of Commerce and the fact that the District has historically been home to just over one-half of the total population and households in the County. Table IV - 2 reflects their distribution in 1980.

TABLE IV - 1

Building Permits, Essex County 1981 - 1990

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
MH	24	32	30	32	23	30	40	47	34	47
CR	24	28	35	30	35	37	36	50	54	64

MH - Mobile Home
CR - Conventional Residences

Source: Review of Essex County & Town of Tappahannock Permits
County Staff & Redman/Johnston Associates, February, 1991

TABLE IV - 2

HOUSING DISTRIBUTION BY MAGISTERIAL DISTRICTS

	Total Persons	Total Housing Units	Total Year-Rd. Units	Occupied Units		
				Owner	Renter	Total
Essex County	8864	4082	3453	2381	569	3040
Central District	4530	1913	1775	1191	431	1622
Occupacia Dist.	2219	774	732	552	131	683
Rappahannock Dist.	2115	1395	946	638	97	735

Source: 1980 Census of Housing; General Housing Characteristics, Vol. Part 48, Virginia.

Using past trends to project future population and therefore demand for services has limitations, particularly if only the recent 10 year trend is utilized as in the case of Essex County, it would result in continued future losses in population. Any projections will be tempered by County and Town Policies and market trends and conditions.

In reality, no single projection is safe when peering 20 years into the future. As a result, two alternative growth scenarios which might evolve in Essex County are considered. The first trends scenario is one in which Essex County's population grows at about the same level as it has during the period 1960 to 1990. Using this expanded historical period as a basis for projections eliminates what may be an aberration in the loss of population evidenced in the last ten (10) years. Such a growth pattern would respond to a longer term trend. (See Table IV - 3)

Table IV - 4 also reflects a continued trends scenario but limits the basis for projection to the trends evident from 1970 to 1990, as a somewhat shorter and more recent period.

The result of both scenarios are illustrated in Table IV - 3 & 4 reflect a range of population increase of between 1,066 and 1,562 new residents by the year 2010. The following kinds of factors will influence which of the two growth trends materialize:

- The degree to which employment opportunities in Essex County increase over time
- Whether or not construction of a Route 17/360 bypass or truck route alternate occurs within the planning period
- The manner in which planned expansion of sewer and water facilities

in the Town and surrounding County service area occurs over time

- The degree to which commercial services and growth (e.g. Wal-Mart) occurs over time
- The influence of regional transportation improvements (Washington Bypass or I-95 corridor modifications) and the manner in which they influence regional traffic and growth patterns.

TABLE IV - 3

Projected Population Growth

Based on Trend Growth (1960 to 1990)

1960	1970	1980	1990	2000	2010
6530	7099	8864	8661	9194	9727

TABLE IV - 4

Projected Population Growth

Based on Trend Growth (1970 to 1990)

1970	1980	1990	2000	2010
7099	8864	8661	9442	10223

For comparison the most recent population projections published by other sources were prepared in 1986 and 1990 by the Virginia Department of Planning & Budget and University of Virginia, Center for Public Service respectively. The former agency projected a year 2000 population for the County of 9,700 residents. The Center for Public Service projects 9,400 residents for the year 2000. While projections for both agencies are higher than the 9,194 projected in Table IV - 3, both were prepared assuming a 1990 population of over 9,000 residents before the recent preliminary census results became available.

Therefore, based on comparisons of available projections performed by various agencies in the past, tempered by the recent census, the projections identified in Table IV - 4 would appear to be adequate for purposes of evaluating the general level of growth which could be expected within the planning period. Moreover, selecting the somewhat higher projection is advisable to assure the County is prepared to provide for the possible higher rate of growth and the services which may be prompted by a greater growth rate. Such an approach is consistent with the adage "better safe than sorry".

Household Projections & Trends

There are many ways to look at the implications of population growth and residential expansion in Essex County. Focus on households and projections for future households are considered equally important to population projections for several reasons.

A household in essence, is the basic urban services-demanding unit in a county. Increased water and sewer loads, expanded school requirements, and ballooning highway travel volumes can all be traced to households. Households can be converted to household population by means of average household size. That factor declined substantially in Essex County through the period 1960 to 1980. Finally, households are the visible evidence of population growth and change in the County from the perspective of existing residents. Table IV - 5 identifies household projections for Essex County.

The projections reflect a conversion of the population projections identified in Table IV - 4 to households recognizing the County and National trends toward decreasing household size. The result of a decreasing household size is more homes to accommodate a given population in the future than is manifest today. Projections indicate that the County should plan for an increase of 1008 households over the 20 year planning period.

TABLE IV - 5

Essex County Household Projections

	1970	1980	1990	2000	2010
Population	7099	8864	9442	8661	10233
Average household size	3.4	2.9	2.7	2.5	2.4
Number of Households	2081	3032	3251	3776	4259

Land Consumption Implications

Another characteristic of growth is its form. Varying forms of growth yield either sprawling or condensed development. Table IV - 6, indicates the land needed to satisfy the projected population and households under several lot-size scenarios. Converting households to acres of development begins to create an image of what the growth might look like on the landscape. If all the new growth were channeled into three acre lots, it would consume over 3,000 acres of County land area. Obviously, this will not be the case since some development will be of a higher density, such as that found around Tappahannock. The consumption of land is an important consideration in establishing the appropriate mix of land use controls to manage the form of growth in the County.

TABLE IV - 6

Land Consumption Options to Satisfy
Projected Population Growth
2010

Additional Year Round Housing Units	Acres of Land Needed With			
1008	0.5 ac lots	1 ac lots	2 ac lots	3 ac lots
	504	1008	2016	3024

Future Land Use Issues

The population projections show that the County can expect an increase in population of 1562, or an 18 percent increase by the year 2010.

Traditional planning theory suggests that development should occur around towns or development centers with sewer service. This is a theory that makes sense and, if accomplished, assures a serviceable development pattern. However, this theory may only partially work in Essex County. If, as we suspect, growth trends by Magisterial District continue, a substantial portion (roughly 50 percent) of the County's future growth will want to locate in the rural part of the County where no sewer service or sewer expansions are now planned. These areas tend to be more difficult to accommodate with most County services.

Past development in the County has undoubtedly been driven by the Town's role as a regional commercial and business center as well as the County's riverfront and rural qualities which attract new residents from more urban areas who seek a rural lifestyle or second home. If this growth is to be accommodated without major investment in sewer service facilities, the result could well be the form of suburban or rural sprawl now evident in some areas of the County. The current zoning would only add more impetus to the tendency for development to sprawl, in that a couple of acres in the Country is often market responsive since it is exactly what the former suburban resident from the Richmond or Washington D.C. Metropolitan Areas moving to Essex County desires. As was once said, "when everyone moves to the country, it is no longer country." Large lot zoning may result in a form of rural estate development that encourages higher-value housing and thus ensure that the assessed value of homes covers public costs; however, the resulting pattern of development runs counter to many of the objectives of the County, namely retaining the rural character of the County and preserving agriculture. Attempting to accommodate this growth along highway and road corridors, as is commonly done, will mean that the highway corridors can become continuous strips of housing and commercial

development. This result also would run counter to the goal of preserving the "rural" character of Essex County.

Commercial Opportunities and Issues

It is clear that Tappahannock is an active trade center for a region today of some 90,000 residents in an eight county area. The factor which reinforces this position is its "cross roads" location. Tappahannock is regarded as a regional center of commerce. It's potential size as a trade center is influenced by the size of, and the number of people within its trade area, the amount of competition from other trade centers and the share of it's own trade area market local establishments capture.

Growth potential appears particularly strong, both for the expansion of existing business and for establishment of possible new outlets for retail uses, food related businesses, automobile sales-service as well as growth in building supply businesses in support of regional construction activity.

Presently, the opportunity for growth appears bright and as long as new basic jobs come to the area, the County and Town will remain in a potential growth situation. The factor that could cause growth to level off is competition from other trade centers which might serve the area. Both the Fredericksburg and Gloucester areas have location potentials to compete in Tappahannock's trading area. A potential hazard exists in the possibility of over-responding to short-term trends and building a larger trading center than the region can support. However, there is a little evidence that such a point has been reached at this time.

Another area that may present a more modest opportunity than retail trade is wholesale trade. Data presented earlier indicates that wholesale trade is not a strong component of the local economy. It is not unusual in a region for wholesale trade to lag behind retail, the main reason being that the trade areas for wholesaling is larger than for retailing. There is a likelihood that much of Essex County's wholesale needs are being met by the larger nearby metropolitan areas. Because of its central location and its fairly large (and growing) trade area, there is a potential market for growth in wholesale trade.

Services

For the past several decades, growth in most urban areas has been accompanied by growth in both public and private service and trade employment. Generally, service employment has grown faster than the economy as a whole for the nation and this is also true in Essex County. Much of this increase is accounted for in the two medical service facilities which were established within recent years. These trends are projected at a slower growth rate than in the last five years although service employment is still projected to account for nearly one out of every three jobs by 1990. This growth is likely to be distributed among

expanding medical facilities, additional public and semi-public services and other services related to serving growth and tourism.

One prospective opportunity for growth in services is in the area of commercial entertainment services. This potential might be reflected in the establishment of any of several commercial entertainment establishments such as; a bowling alley, a skating rink or a motion picture theater. Services generate the same issues as trade with respect to utilizing commercial land, in most cases, and the types of parking and traffic needs that are generated.

Manufacturing and Industry

The manufacturing potential of the area is demonstrated by the rise of several major industrial employers since the early 1960's, dealing in national markets. These industries came during a period when another strong employment group, lumber manufacturing, all but disappeared from the local economy because of automation. This illustrates the importance of diversified basic employment sector to a community in smoothing out the severe impact of a decline, or temporary disruption in a specific industry or industry group. Because the community had the foresight to develop the Industrial Park which is the focus of most of the present industrial employment, the present employment base is fairly secure. Land is still available in the Park which provides potential for growth, and additional land in the County will help to attract growth in this segment. Alternate sites for consideration may be necessary to provide flexibility in location needs of potential industries.

In promoting additional industrial growth, the objective should be to maintain and enhance as much diversity in the industry base as possible.

Development Pressures

One result of economic growth is often residential population growth. Essex County has not experienced the same level of residential growth that the County economy has witnessed. At the present time it is likely the County has been absorbing a labor force that was already in the area. Certainly a large number of persons commute to Essex and Tappahannock from other nearby counties.

Eventually, albeit perhaps beyond the next 10 years, the growth of an employment center can be expected to attract more families who will desire to move to the area in and around Tappahannock. This will put pressure on both the private and public sectors and raise questions of "how to deal with such growth". At such time as such pressures become evident, the County and Town may need to reconsider elements of this Comprehensive Plan and redirect policies accordingly.

Development of Community Services

Growth will place demands on the County and Town governments for more community services, such as: water, sewer, sanitation services, traffic control, recreation and educational facilities. This pressure in turn will increase the cost of operating the local government and raise issues of how to finance additional costs. Because Tappahannock is the focus for most of the growth in Essex County, these pressures will be particularly strong within and near the incorporated Town limits. A strong partnership between Town & County governments will be essential to satisfy the demand for cost-effective services.

Other Planning Considerations

Because of its extensive shoreline along the Rappahannock River, Essex County could expect to have a potential market for an increase in the number of recreational and retirement homes, which many other Eastern Virginia communities have been experiencing in recent years. Recreational and retirement homes are not necessarily a problem but most of the concerns of urban residential development are associated with them - provision of basic facilities and services. Still another element of development concerns what happens to farm lands in the path of growth. Pressures for land conversion and resulting rise in land prices often make it more economical for farms to be developed than farmed. Some communities faced with this situation desire to protect prime agricultural land through land use regulations and other appropriate policies and incentives.

A final development issue to consider is the trend toward highway strip development. With Route 17 and 360 both serving as tourist routes and the pressures for expanding commercial facilities, there is likely to be continual pressure on these roads for commercial use. Development policies should be established for these routes and included in the local comprehensive plans and regulatory documents. Zoning and subdivision regulations are the basic regulations through which this issue can be addressed. The corridor enhancement district proposed in this plan forms the basis for such regulatory reform.

GROWTH MANAGEMENT AND LAND USE PLAN ELEMENT

The Land Use Plan Element is the most important element of the Essex County Comprehensive Development Plan in that it establishes the relationship between the County's existing pattern of development and the location, distribution and scale of future development. As such, it also influences the location and timing of public facilities and transportation system improvements. The enhancement of specific County qualities, preservation of rural character, and protection of natural resources is achieved by all elements of the Comprehensive Plan with the land use element serving as the cornerstone. Moreover, the cost-effective provision of roads, water and sewer facilities and other public services cannot be assured without a clear means of managing growth by directing it to specific areas where development infrastructure already exists and away from rural areas of the County where it does not exist. The land use plan provides that means.

The land use element of the County Comprehensive Plan is where the various planning goals and objectives and chapters on specific topics must be integrated into a comprehensive whole. The way in which land use districts are mapped, their infrastructure requirements, the objectives established for resource protection, definition of community character, provision of public facilities and transportation improvements must all be integrated into the Comprehensive Plan through the land use plan. In short, more than any other single plan element, the land use plan captures a future vision of Essex County's development pattern. Finally, the land use plan is a fundamental extension of County Growth Management philosophy and illustrates the spatial land development implications of Growth Management policy.

Background

The majority of development within Essex County has occurred in the Central Magisterial District. Development has also occurred along the Rappahannock River shorefront south of Tappahannock. With some exceptions, suburbanization has taken the form of strip development in a scattered pattern along roadways throughout the remainder of the County.

The distribution and location of growth in recent years has not always assured efficient delivery of public services as its pattern in rural areas of the County has been widely dispersed. Moreover, the limited sewage treatment capacity in the County accelerates pressures for conversion of rural farmland to development in areas heretofore not subject to the pressures with which they may face in the future. Present land use controls in the face of these forces may prove inadequate to achieve a "planned" pattern of land use consistent with County growth management objectives. Continuation of this trend can clearly create widespread rather than contained public service delivery demands over time and prompt a widespread and inefficient use of public dollars to meet increasing demands if unchecked. Therefore, the Land Use Plan derives from the fundamental need to foster

a more land efficient and serviceable development pattern in the future. It serves as the foundation upon which the "contained growth" policy adopted by the County is to be constructed.

The two guiding objectives of the Essex County Land Use Plan are the preservation of the County's rural character and protection of its natural resources. These two objectives work well with the objectives of preserving agricultural land use and directing future growth to areas presently serviced or planned to be served with public sewer and water. These two objectives are of paramount importance since a failure to achieve these will result in a perceived failure of the entire plan even if other objectives, such as those relating to transportation and capital facilities planning, are successfully accomplished.

The existing Land Use pattern and geographic distribution of land uses are important fundamental determinants of the County's character and quality of life for its residents. Past settlement patterns have established the basic framework for future development. In order that the future use of land respond appropriately to the land use goal and objectives (Part II of this document), County policies will need to be continually re-evaluated.

Policy Considerations

Growth management is related to all other planning issues in the County and in particular the Land Use Plan. The location, costs and qualities of development are the major areas of concern, in Essex County. Although each may be discussed separately, a high degree of interrelationship exists.

A specific program for the installation of necessary public facilities in advance of need will control the rate and location of new growth. Growth management goals and objectives must also recognize other planning issues.

Clearly, natural resources, rural conversation, and agricultural preservation objectives must be reflected in locational policies.

For the most part, the rate and location of growth is tied to the ability to provide public services to new developments. This ability is highly dependent on the cost impacts of proposed developments on the existing service network. Current residents should not be expected to subsidize the provision of services to new residents or the profits of the project developer.

The following Growth Management Policies are intended to facilitate County efforts to accomplish Land Use Planning objectives:

- Provide for an efficient and effective growth management framework which targets population growth at the rate of 8 percent to 10 percent per decade, and controls the type, location, and costs of growth in accordance with the Land Use Plan.
- Provide adequate land area for the approximately 1008 new dwelling units projected to occupy locations in the County by the years 1990 and 2010.

- Anticipate an Essex County population between 9700 and 10,300 residents by the year 2010.
- Adopt and implement regulations that require that the public costs of adequately servicing proposed developments be clearly defined and that require that the funds for servicing and maintaining these developments are provided without significant additional financial burden on current residents or public agencies.

The amount, distribution and timing of population growth will determine the costs of providing the facilities needed to support population increases, and also determine non-residential growth (commercial and industrial). The County's population is expected to increase by approximately 1500 persons by the year 2010. Sixty to seventy-five percent of this projected growth is expected to occur in the Central Magisterial District in service areas near Tappahannock.

Based upon a declining average household size over the next 20 years, by the year 2010 there will be approximately 1,008 additional households in the County. Future housing units will be proportionally distributed in the same manner as future population growth. The land area required to satisfy projected housing demand at lower densities is substantially greater than at higher densities. Therefore, providing areas for development at higher densities reduces the rate of conversion of farmland and preserves rural character in many County areas. This approach concurrently permits protection of natural resources and establishes more serviceable development form. Selective concentration of development is needed to facilitate established planning goals and objectives.

The following Land Use Planning policies are intended to limit urban sprawl and concentrate most of the County's growth in clearly identified development areas:

- Adopt and implement a land use plan map which limits growth to desired locations and at desired intensities.
- Coordinate the use of the land use plan map, the zoning map, the capital improvements plan, and the master water and sewer plan with one another in terms of districts, locations, and planned expansions to assure growth management efforts are cohesive.
- Revise the County's zoning structure to provide for distinct and varied development options including cluster development provision in rural and agricultural districts to implement identified land use objectives.
- Use land use controls and ordinances to implement standards for development which improve its qualities regardless of the district in which development occur.
- Protect residential zones from incompatible activities and land uses in order to ensure comfortable and safe living environments.

THE LAND USE PLAN AND IMPLEMENTATION STRATEGIES

The Essex County Land Use Plan will set the stage for guiding or managing the direction of future development in the County. As such, it establishes the skeletal framework for all plan elements. The basic intent of the conceptual land use plan and map is that the County channel most of its population into and around the areas delineated as a development services district surrounding the Town of Tappahannock and that development in other County areas be limited to a somewhat greater extent to minimize the impact of service delivery cost in more remote County areas.

The various County land use districts will serve as a basis for County structuring of zoning classifications with the intent and purpose for each district to be achieved or accomplished through land use controls and performance standards appropriately framed consistent with each districts purpose.

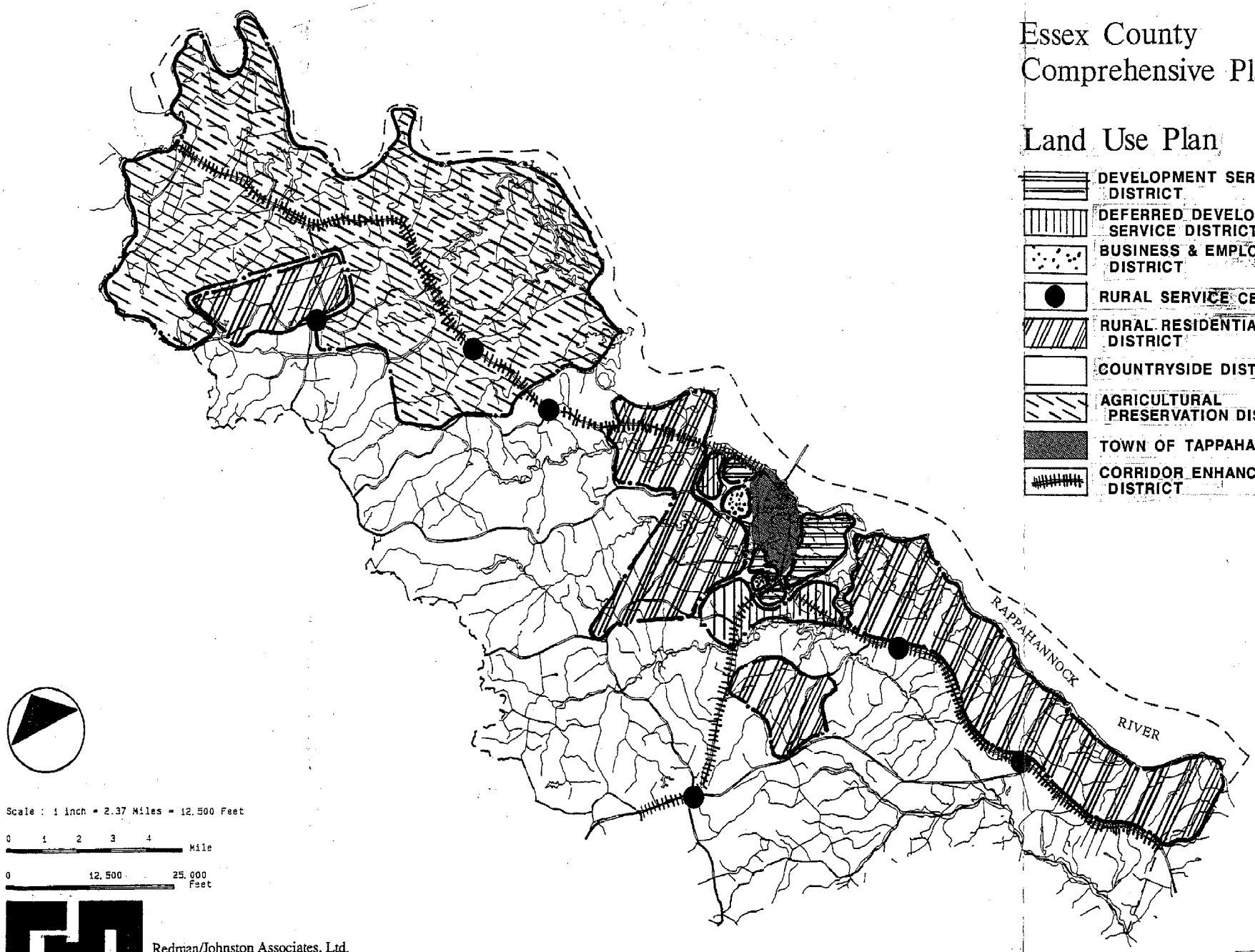
The County future land use concept plan is presented on the Land Use Plan Map (MAP IV-1) and is shown in terms of general areas or districts. Each has been derived from the objectives and are in consonance with the general theme and philosophy of "contained growth". They have directly shaped the development of the recommended Land Use Concept Plan Map. These concepts are represented as the Planning Districts listed below:

- Town
- County Development Service District
- Deferred Development Service District
- Business and Employment District
- Rural Service Centers
- Rural Residential District
- Countryside District
- Agricultural Preservation District
- Highway Corridor Enhancement District
- Chesapeake Bay Preservation Areas

These districts are described in terms of their respective roles in directing County growth in the remaining sections of this Plan element. Illustrated on the Land Use Plan Map are districts derived from a combination of a number of determinants including: existing land use patterns; projected growth and development trends; the natural capacity and suitability of the land to support development; the availability or proposed availability and adequacy of development infrastructure (roads, sewer and water); and the Goals and Objectives established in Part III of this document. Each district description outlines the general type, intensity and character of development that should be encouraged within the district. The Land Use Plan Map shows the general location of different districts

Essex County Comprehensive Plan

Land Use Plan



Scale : 1 inch = 2.37 Miles = 12,500 Feet

0 1 2 3 4 Mile

0 12,500 25,000 Feet

Redman/Johnston Associates, Ltd.
Planning, Environmental Science, Landscape Architecture

MAP IV-1

throughout the County. The Land Use Plan also establishes the framework and basis for a further refined classification of land into districts for zoning purposes pursuant to adoption of the Comprehensive Plan. In addition to serving as a general guide for implementing land use policy, the Land Use Plan also should serve as a guide to County decision makers regarding community facilities (primarily water and sewer) and transportation (roads) planning.

Town

The Town of Tappahannock is the cornerstone for the County's Comprehensive Plan. The town serves to anchor County identity and to provide the central focus for activity in County life. As the major settlement in the County, it also represents the major investment in infrastructure to support growth. The fate of County and Town are mutually intertwined. The quality and character that development and time bring to one will clearly influence the other. Therefore, the County Comprehensive Plan acknowledges the Town of Tappahannock as the underpinning for the Land Use Plan framework. Guiding growth to near town areas where facilities can be most logically extended permits protection or rural character and reduced demand for County services in more outlying rural areas.

County Development Service District

The County Development Service District generally corresponds to locations where growth can be most cost effectively supported within the planning period. The Development Service District contains roughly 2900 acres and surrounds the existing principal center of population, services and employment within Essex County. The vast majority of commercial and industrial development as well as somewhere between forty and sixty percent of the County's residential development is projected to occur in areas designated as the Development Service District over the next twenty years. How development is managed in this district will be dependent on both the County and Town's relationship as they will guide growth in the area based on mutual decisions. It will be important for the County and Town to mutually determine how growth objectives may best be accommodated while protecting the qualities of rural character both currently enjoy.

Town infill development and redevelopment will occur over time and the Town will be challenged to provide services to existing residents while protecting the character of existing town neighborhoods. However, the major development of the County will occur in the Development Service District underscoring the need for more detailed planning for growth in this area. In fact, this Comprehensive Plan update recommends that a fiscal study be undertaken to determine how the County and Town will be properly positioned to manage growth within the district. Evaluation of fiscal impact on both communities and how service delivery costs might most equitably be borne to support realization of

the plan will be critical.

The Development Service District comprises the most suitable areas for new population growth. Growth in these areas will prevent the outward sprawl of residential development into rural County areas, and keep the new population close to the existing centers where residents can be economically provided with utilities, services, and employment. In addition, the impact upon the County road system will be minimized since families will have the opportunity to be located physically close to the jobs and services which they require. Likewise, economic objective identified in Part III of this Plan emphasizes the importance of near Town areas in the County's economy.

Tappahannock should remain the center of major Countywide governmental administrative functions and services, and other institutional uses serving a Countywide population. The land areas shown as Development Service District share several common attributes. Each appears to be, to some extent, subject to greater development pressure than many other County areas. Each either has in place or provides opportunity to put in place the kind of services required by development. These services include an existing or planned transportation system that can accommodate the movement of people and goods and sewer and water facilities that can service development at greater residential densities or can service industrial and commercial uses. Each of these areas is in some way already characterized by development activity which suggests that efforts to preserve farm land or to establish significant resources protection programs would be less effective in these areas than if established in other County areas. The major advantage of the development district concept is to map in advance those areas where the County and Town will plan to provide infrastructure and will work with the development interests of the County to be sure it is put in place. However, this in no way implies that the costs of development will be solely borne by the County taxpayer. In providing opportunities for development in these areas, the County can thereby better achieve its resource protection and its agricultural preservation objectives by reducing pressures for development in areas dominated by farming activity or natural resources.

Growth in the Development Service District can be more effectively managed in that these areas are adjacent to areas currently served by sewer and water facilities. The challenge is to ensure that the conversion of land from rural to suburban development in these areas does not exceed the capacity of public services and facilities. Likewise, the plan must provide protection for natural resources such as Hoskins Creek and elements of rural character that are considered desirable in these areas.

To improve the visual and functional qualities of development within the Development Service District, the County will need to evaluate and revise its land use ordinances to establish performance standards for landscaping, control of access, lot coverage, and buffering from adjacent transportation corridors. Future commercial and industrial forms of development within the development district on sites not presently zoned for such uses should be carefully evaluated to assure site characteristics permit these objectives to be achieved. The past linear form of commercial development, particularly along the Route 17/360 corridor, has not always enhanced the visual quality of development and has reduced the ability of major roads to serve through-traffic. Future areas within the

Development Service District which may be designated for commercial or industrial development should be large in size (e.g. 10 to 15 acres) and should be located at intersections providing site frontage on at least two streets with adequate depth to provide space for service roads. Such sites can use the access provided by these streets and are adequate in size to house several uses with shared access, thereby minimizing outlets to the major road system. Their larger size permits sufficient land to accommodate landscaping between use and highways to enhance development visual qualities. Clustering of residential development should be encouraged within the development district to maintain open space. Such development, even when exclusively residential in nature, should be buffered and separated by landscaping from major routes or adjacent incompatible land uses.

All portions of the Development Service District (DSD) are immediately adjacent to Tappahannock's corporate limits and include areas at Bray's Fork, areas east of Bray's Fork, toward the Rappahannock River and areas west of Bray's Fork along the 360 corridor.

Deferred Development Service District

The Deferred Development Service District is basically intended to facilitate future development beyond a 10 year time horizon. It is designated in the plan to protect its qualities so that it will be ready for a planned pattern of "town-scale" development in serviceable form. If designated rural residential or prematurely developed at non sewer and water densities, the Deferred Development District would essentially freeze future opportunities for growth in "serviceable" form as the Town Core expands. Some 4300 acres are designated as Deferred Development Service District.

Since the purpose of this district is the same as the Development Service District (DSD), much of the description of the DSD is equally applicable to this district. The chief distinctions between the two districts are their location relative to the town and anticipated time frames for development.

Business and Employment District

The Business and Employment District is noteworthy in that it reserves specific areas of land near the County's existing airport and major industry settlement for future growth of the same kind. Roughly four hundred acres, of which some three hundred appear suitable for development, are identified for business and employment park development. The area obviously includes the present airport. Should the airport be relocated in the future, it will need to be linked carefully to the Business and Employment District to assure a strong highway connection between the two is provided.

While the Plan Map specifically reserves this near airport area for future business and industry development, it by no means is intended to be the only location for such uses.

Specific industry land area requirements and site suitability factors may not always permit their location in this district. Therefore portions of the Development Service District, particularly along route 360 west of Bray's Fork may represent alternate sites for business and industry use. Business and industrial uses should be served with sewer and water facilities and situated with direct access to either arterial or major collector routes. Industrial development within the district or in the Brays Fork area near Route 360 affords such access and both areas are generally removed from residential development. To encourage development of industry to high standards, "business park" development form should be encouraged. This permits the co-location of businesses in an attractive campus-like setting while minimizing individual industry points of access to the highway system. When industrial development occurs in an area on a fragmented basis, uniform standards should be established to assure all uses when cumulatively located present a cohesive park-like image and character.

Regardless, in addition to the designated area on the Land Use Plan Map, the Business/Employment District can be located as a floating zone district within the Development District and areas adjacent to major routes if the criteria described above are met. A business park district which is approved as a floating zone should be developed in accordance with a comprehensive site plan. Implementation of the site plan assures compatibility of industrial operations with surrounding areas. A park-like atmosphere is created which provides an attractive buffer between industrial uses and other neighboring land uses.

Rural Service Centers

Several rural service centers including most of which are located along the Route 17 and 360 corridors provide opportunities for provision of services necessary to support rural development in some County areas. Designated as rural service centers, they are intended to accommodate limited commercial use and provide basic levels of support services to residents who may be located in a one to six mile area or radius.

These rural service centers or villages perform a number of functions in the growth management program. These include servicing as centers for rural residential development and providing for commercial services for rural areas of the County and the traveling public. The ability of these centers to accommodate some portion of the future growth of the County is a function of their location and the existing scale of development and range of services provided to surrounding rural areas. Characteristics common to most of these rural service centers are the existence of post offices and country stores, gas stations, or churches, providing each with its own sense of identity.

The concept of the rural service center is included in the land use plan in order to recognize and provide for the special needs of these County unincorporated centers. These centers are often very different in character.

These rural service centers serve a multitude of functions in Essex County. They range in

scale from fork in the road where a general store and beauty parlor are located, to a rapidly expanding community that is beginning to emerge as a service center of larger scope. Their distribution throughout the County is shown on the Plan Land Use Map. Many have historic qualities or structures which suggest future development near them should be limited in scale or, if unchecked, could overwhelm or disrupt their more rural character.

All of the rural service centers do, however, share much in common, and collectively they play and important part in Essex County life. In general, these Centers tend to be somewhat residential in character, or offer some employment through limited commercial services as well as public or institutional uses. In general, they presently function as rural service centers and the County should preserve and enhance their present character in order that they may continue to act as rural service areas and to serve their traditional roles in the County life.

Generally, these areas shown as Rural Service Centers should:

- remain small in population size
- remain small in physical area
- be allowed to continue to provide limited, highly localized commercial services (such as a gas station or general store, etc.)
- be allowed to serve as home for community facilities and services when needed
- be allowed to continue to provide limited employment opportunity.
- have a population density of one dwelling unit per acre, which is greater than the surrounding more rural areas.

Areas directly adjacent to existing uses in each village could provide for their continued development consistent with the degree and scale of the individual village centers. To this end, architectural themes should be framed for each rural service center with development in its confines subject to architectural review for compatibility with the particular centers image.

The need for central water and sewer is not anticipated in the rural service centers villages. However, in centers where land application of waste water is a feasible treatment technology (i.e. soils are potentially suitable), these systems can allow greater clustering of residences and opportunities for commercial use.

The following settlements have been designated rural service centers in the Land Use Plan:

- Hustle
- Champlain
- Caret
- Dunnsville
- Center Cross

- Miller's Tavern

In the future it is possible that additional rural service center sites might be identified. However, their future designation should be a function of their need to serve as service centers in the context of their existing distribution in the County. These new centers would be limited to providing the most basic retail services for the convenience of the rural population.

Rural Residential District

The Rural Residential District identifies areas which have manifested rural residential development character or qualities as a result of past construction in the County. This district includes some 44,000 acres on 28.5% of the County's land area. The Rappahannock River front both north and south of the Town as well as areas west of the Town near Kino are so designated. These areas are intended to absorb between fifteen and twenty-five percent of County growth over the twenty year planning period at a low density, rural residential scale. Densities for residential use in this district will be approximately 1 dwelling unit per acre depending on existing settlement patterns and past zoning treatment for lands in the district. Commercial services and employment opportunities in the town or the adjacent Development Service District are intended to provide the shopping and employment opportunities that residents in the Rural Residential district will require.

Countryside District

The Countryside District is the largest in physical land area (67,500 acres or 42% of County land area) and is intended to limit development to a level which should never be expected to require substantial support services from the County. One acre lots will be permitted in the Countryside District in the zoning ordinance, but the number of lots will be limited to one per each 5 acres owned to assure the maximum level of development is somewhat limited but equitably distributed among land owners in the district.

Agricultural Preservation District

The Agricultural Preservation District is established at the northern end of the County straddling both sides of the Route 17 Corridor and essentially serves as a gateway to the County from the north. The district currently is dominated by agricultural use and is remote in its location from existing County services. To minimize future impacts on the County for costs of services, and to maintain the agricultural land base necessary to support a continued viable agricultural economy this district substantially limits residential development.

Within the district for the first twenty acres owned and for all parcels under twenty acres in size, a property owner would be permitted one house for each five acres owned. Beyond the first twenty acres owned the property owner would be entitled to an additional one house for each twenty acres in the parcel. By way of example, a property owner with one hundred acres would be permitted eight lots. Four homes for the first twenty acres (1 per 5) and four homes for the additional eighty acres owned (1 per 20). The district includes 41,500 acres (26% of County land area) and as such is roughly the same size as the Rural Residential District.

When comparing the Rural Residential, Countryside, and Agricultural Preservation Districts, one should note that the minimum lot size permitted for homes in any of the three districts is the same, one acre. However, the number of lots permitted declines somewhat in the Countryside District to one house per 5 acres and somewhat more in the Agricultural Preservation District at 1 house per 20. In effect, the property owner in any of the three districts can develop the same product, a one acre lot.

The only distinction between the districts is the number of lots permitted within each. Such an approach presumes to be reasonably equitable in that it permits any land owner the opportunity to sell a few one acre lots, yet protects the County from large scale development in areas where it is not prepared to provide services to support it. Moreover the result provides opportunity for clustering development particularly in the Countryside and Agricultural Preservation Districts and virtually assure large masses of open space are maintained over time. These open spaces will serve to maintain farmland in farm use or preserve sensitive lands and wooded areas to yield natural resource protection benefits over time.

Highway Corridor Enhancement District

The purpose of the Highway Corridor Enhancement District is to protect and improve the quality of visual appearances along these linear corridors and to provide guidelines to ensure that buffering, landscaping, lighting, signage, and proposed structures are internally consistent and of a quality which contributes to County character. The Highway Corridor District when implemented through zoning will provide for special access and buffering, and setback requirements along the County's major highways.

The Highway Corridor Enhancement District is an area within which certain specific public policies relating to development review would be administered by the County through overlay zone regulations in the Zoning Ordinance. Views afforded to drivers and passengers, whether residents, workers or visitors, traversing the major transportation routes of Essex County provide a lasting visual and, therefore mental, impression of the County's character. Although the visual experience probably forms only a small part of a person's overall experience in the County, it, nevertheless, is of special public concern and requires public attention if the County's image is to be a positive one now and in the future.

Not all development in Essex County requires the same level of public scrutiny. The most critical visual areas lie along the major transportation routes since they are shared by all residents and tourists. Hence, corridors of 500 feet from either side of the right-of-way of the major transportation route rights-of-way are identified for specific regulatory implications.

The visual character today along these corridors is diverse, ranging from areas primarily rural, natural, and scenic to areas with disorganized and cluttered roadside development. The intent of the policies for the Highway Corridor Enhancement District is not to preclude the diversity that already exists; but, rather to encourage and better articulate the variety of visual experiences along the current highways as well as along the corridor of the proposed future routes for the County's major roads (e.g. Tappahannock Bypass/Parkway).

Future development of lands within the Corridor shall be subject to the particular zoning district in which they occur, as well as the following policies that are specific to the overlay corridor. These policies are not intended to restrict or prevent the construction of buildings within each Corridor, nor to require the removal of existing structures. The Corridor Enhancement policies are not simply setback requirements, although certain minimum setbacks will be required to protect highway rights-of-way and maintain sight clearances for traffic safety.

The Route 17, 17/360, and Route 360 corridors and lands within 500 feet from their respective rights-of-way are designated as Corridor Enhancement Districts on the Land Use Plan Map. Other routes may be established in the future as determined appropriate.

Policies specific to the Highway Corridors include:

- Increased buffering requirements to screen unattractive buildings from view which provide for a mix of canopy, understory tree and shrub level plantings.
- Special standards for signage height, design, size, materials, and lights to maintain and enhance visual qualities.
- Landscaping to be used to soften lighting and signage impacts and to be located in groupings to identify entrances to sites.
- Special consideration of new development within this district including assessment of visual impact of development, assessing pre-development visual conditions and how the proposed development will affect them.
- The review of projects in the Highway Corridor will acknowledge the existing rural service centers as integral to the unique visual character of the corridor.
- Service roads be required when appropriate as a tool to achieve access control within the Highway Corridor Enhancement District.

Planned Residential or Planned Unit Developments

Planned Residential or Planned Unit Developments, although not shown on the Land Use Concept Plan Map, are established to provide for areas within the Development Service District where higher density or more intense development can be accommodated. Planned Unit and Planned Residential Developments will be established as floating zone districts, which can be "brought to land" only in those areas which meet the standards framed in County ordinance consistent with the concept outlined herein.

Rather than mapping each of their future locations in advance, Planned Residential or Planned Unit Developments will be designated in accordance with performance standards to be structured in the County Zoning Ordinance. These developments will be limited to locations within the Development Service District where public benefits, in the form of highway improvements, provision of affordable housing, provision of parks, provision for sites appropriate for construction of needed community facilities, are provided as part of the development approval process in exchange for higher densities. Threshold size and location requirements for their designation would also be framed in County ordinances to guide decisions concerning their location.

While used as a tool to permit higher density residential development in portion of the development district, this concept does not encourage densities that are higher than would be consistent with the surrounding, established neighborhoods or adjacent town developed lands. Moreover, development approval and designation of the district should not proceed absent substantial public benefits and demonstrated consistency with Plan objectives.

Furthermore, Planned Residential or Planned Unit Development densities for new sites adjacent or near to established neighborhoods would be required to buffer the edges to minimize impact to established neighborhoods. This approach acknowledges existing development patterns and recognizes historic development conditions. In short, higher residential densities or mixed use will be permitted only in such areas of the development district where infrastructure in the form of sewer, water and transportation systems would not be adversely impacted or could be accommodated within a defined geographic cell.

Chesapeake Bay Preservation Areas

The objectives indicate that special emphasis should be placed on the preservation of sensitive resources. These resources are often located at or near waterfront areas of Essex County. Without a firm commitment to preserve the natural beauty and environment resources in these areas, the County could find this natural asset spoiled by intensive residential development. Such a commitment is further prompted by the shared objectives of the County and State of Virginia Chesapeake Bay Preservation Act in improved water quality of County tributaries to the Bay.

In keeping with these objectives:

1. A high degree of restriction should be placed upon the use of all waterfront land that lies outside the Development Services Districts and Town and Rural Service Centers.

2. These restrictions should take the form of low residential densities, and high levels of protection of sensitive resources and in keeping with the Chesapeake Bay Preservation Acts requirements.

3. Strict Resource Protection Performance Standards for development in the areas designated should be established in Zoning, and Land Subdivision and Resource Protection Areas and Resource Management Areas (Both subparts of the Chesapeake Bay Preservation Areas of the County) and Site Plan requirements and regulations.

4. Strong emphasis should be given to the provision of public assess to the waterfront including the establishment of Natural Parks.

Although not shown on the Land Use Plan Map, both Resource Protection Areas and Resource Management Areas are considered Land Use Districts. Their location and extent are generally represented on Map II-4 contained in Part II of this document, based on mapping efforts conducted by the Middle Peninsula Planning District Commission in 1990/91. Larger scale maps which identify their location with greater precision are available for review through the office of the County Administrator. Greater discussion of the Chesapeake Bay Preservation Act and its implications for future County planning efforts is located in the Chesapeake Bay Preservation Program Plan element. Protection standards for resources in these areas will be implemented through overlay district provisions in the County Zoning Ordinance, and through County subdivision and Erosion and Sediment Control Ordinances.

Land Use Plan Summary

The County is not expected to witness substantial growth in the next ten to twenty year period. Therefore the Plan does not seek to dramatically limit any one particular property owner's development options, but instead at the downside permits virtually any property owner to develop one acre lots. However, at the simplest level it recognizes that the number of those lots and the scattered format that they take can prompt service delivery costs that will not be desired by the County. Therefore it seeks to locate development in "serviceable form" in the Development Service Districts over the near term five to ten and long term ten to twenty year planning period. Furthermore, the plan seeks to limit the degree of development that occurs in other districts consistent with objectives to protect natural resources, rural character, and minimize service delivery costs.

Estimated Land Area by Planning District

DISTRICT	ACRES	% of TOTAL
Development Service District	2,922	1.8%
Deferred Development Service District	4,375	2.7%
Business & Employment	337	0.2%
Rural Service Centers	0	0
Rural Residential District	44,264	28.5%
Countryside District	64,754	39.8%
Agricultural Preservation	41,588	26.0%
Tappahannock Limits	1,760	1.1%
	160,000±	100%

TRANSPORTATION PLAN

Essex County has a transportation system typical of rural counties. This system depends heavily on automobile use and has significant morning and afternoon traffic peaks. Car pooling, van pooling and transit use are less that the national averages. Transit service in the region is limited to Greyhound bus service.

Though the Virginia Department of Transportation (VDOT) has primary responsibility for the highway system, Essex County is a strong partner in transportation planning. This occurs because of its role in identifying highway improvement needs and its policies and regulations which guide land use and development in the County. Essex County's transportation system for the year 2010 requires special consideration near Tappahannock areas designated as future development service districts. Given average daily traffic volume increases by almost 50% in the period 1981-89, and the designation of this area as appropriate for future development, the need for Town by-pass/parkway will increase over time. From the analysis and the discussion of growth management three important transportation planning directions seem apparent:

1. The capacity of the major arterials is key to growth management of the County and should be carefully conserved. This implies strict access control and residential and nonresidential design standards that emphasize internalization of circulation systems.

2. Within the designated growth areas, pre-planned expansion of the highway system is required to ensure that the function and viability of the growth centers do not impact negatively on the quality of life, supporting the need for a Tappahannock by-pass.

3. Increasingly, the private sector will have to be part of the solution of transportation issues, including financing and other transportation systems modifications.

Beyond a strict capacity-based approach to highway systems evaluation, consideration of the impact of roads and traffic on community character also needs to be considered. This is particularly true in the rural areas where development historically has been heavily highway oriented. Stripping the rural roads of the County with residential and nonresidential development will undoubtedly result in a loss of the rural character that the County wants to retain.

This element of the Comprehensive Plan sets the framework for addressing transportation considerations discussed above. The goals and objectives statement (Part III) provides the general guidance for developing more specific policies and implementation tools. Background for transportation planning is provided through an assessment of existing transportation network identified in Part II of this Plan.

Functional Classification of Highways

The skeletal framework of the County's highway system are the arterial and collector highways shown on Map IV-2. The map also reveals that the majority of the highway system is composed of local roads and secondary highways primarily functioning to provide access to individual properties. Based on the Functional Classification of Highways described above, the following characterizes the basic highway network in the County.

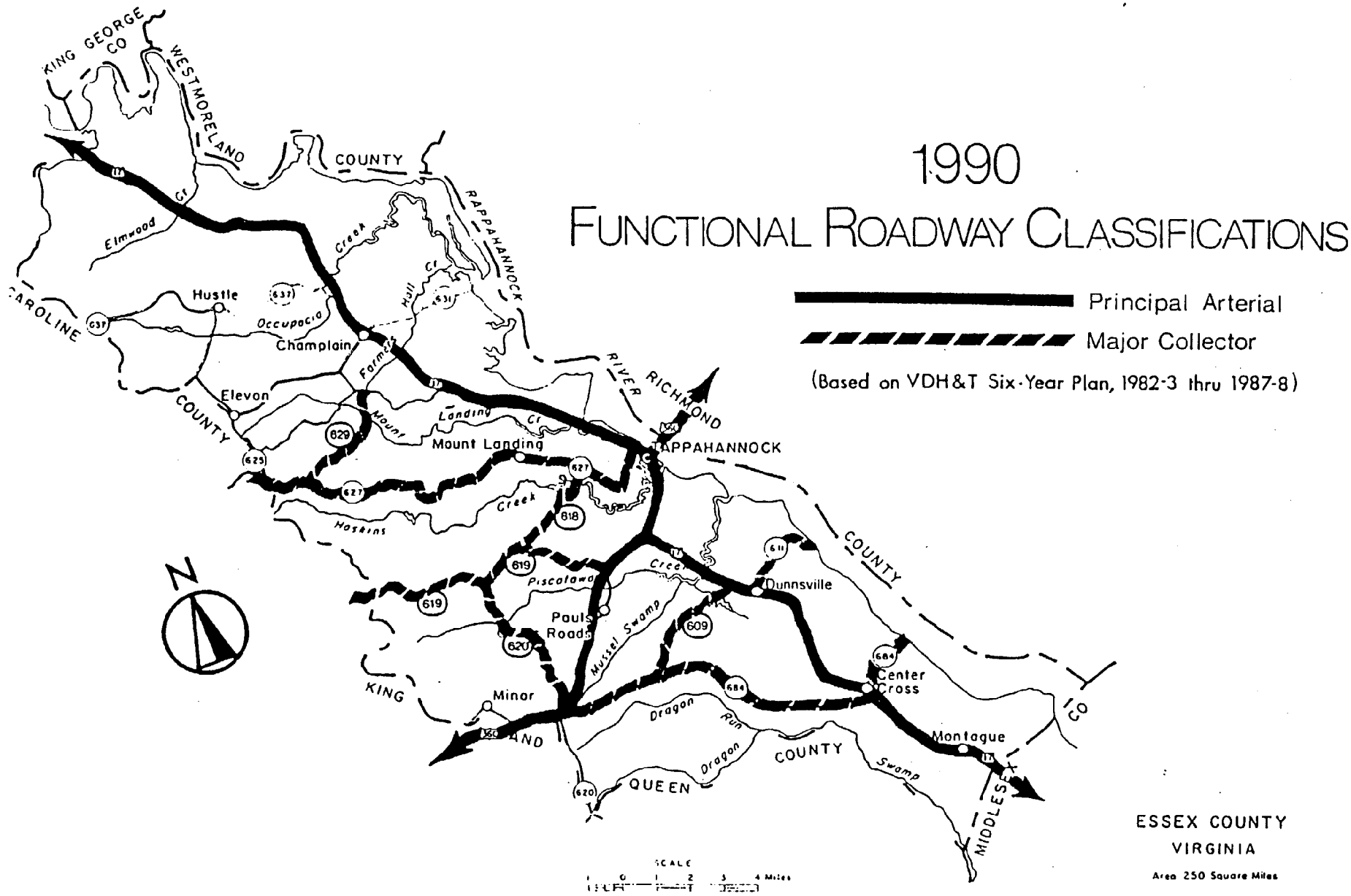
Principal Arterial: Carries a high volume of traffic for intra-state, inter-county and inter-city travel. Traffic on this type of road normally has the right-of-way except in areas of high hazard, then controls are used. These routes in Essex County include:

- U.S. Route 17
- U.S. Route 360

Major Collector: Serves intra-county and inter-community travel, but at a lower volume, and usually connects to an arterial to provide access to the surrounding land. Access is not directly from this road but from a sub-road connected to the collector. Major collectors may also serve community shopping areas, schools, parks and cluster developments. Those routes in Essex County include:

- Route 648 from Miller's Tavern to the Rappahannock River
- Route 620 from the King and Queen line to Dunbrooke
- Route 609 from Route 684 to Dunnsville
- Route 611 from Dunnsville to the River
- Route 619 from Indian Neck to Route 360
- Route 618 from Kino to Tappahannock
- Route 627 from Tappahannock to Beazley
- Route 629 from Routes 627 to 624

In Essex County these routes will continue to carry a great deal of farm and logging equipment. Most of the major collectors are either planned for improvements or improvements are already under way in order to best accommodate the traffic volume. Many have been improved in recent years.


1990
FUNCTIONAL ROADWAY CLASSIFICATIONS
Principal Arterial
Major Collector
(Based on VDH&T Six-Year Plan, 1982-3 thru 1987-8)
KING GEORGE CO
WESTMORELAND
COUNTY
RAPPAHANNOCK
RIVER
RICHMOND
APPAHANNOCK
CAROLINE
COUNTY
Hustle
Elmwood
Occupacia
Champlain
Farmers
Hall Cr
Elevon
Mount Landing
Mount Landing Cr
Hoskins Creek
Piscataway Creek
Dunnsville
Paul's Roads
Mussel Swamp
Minor
KING AND QUEEN COUNTY
Dragon Run
Dragon Swamp
Center Cross
Montague
MIDDLESEX CO
N
SCALE
0 1 2 3 4 Miles
ESSEX COUNTY
VIRGINIA
Area 250 Square Miles

MAP IV-2

Traffic Volumes, Trends and Recommended Improvements

Average daily traffic volumes (ADT) on roadway segments, available from VDOT (1989), are identified in Table IV - 7, Average Daily Traffic Volumes. Total average daily traffic (ADT) on U.S. Route 17 at Bray's Fork exceeded 17,000 vehicles per day in 1989. This represents a 49% increase in traffic volume at this location within the 8 year period. Non-dualized portions of the route south of Bray's Fork require dualization given current and projected traffic volumes. The State's Primary System Construction program (1989 through 1994) indicates these parallel lanes including 4 lane bridging over Piscataway Creek are slated for upgrade presently although progress appears to be behind scheduling anticipated at that time.

Traffic projections made by the Virginia Department of Transportation (VDOT) indicate that the average daily traffic on Rt. 17 through Town will increase from its current level of 22,000 vehicles per day to 30,500 vehicles per day by 2010, assuming no other alternative route is built. Volumes of this degree indicate a need for additional lane capacity on the Town's major transportation artery and/or underscore the need for a town by-pass or alternate parkway within the planning period. Clearly the Town needs to make judicious use of the existing highway system to ensure that the capacity is not prematurely depleted as a result of poor access control, particularly along the major arterial corridors.

In summary, the Tappahannock by-pass is considered to be the major highway system improvement needed within the twenty year planning period. Major collector road improvements made in recent years already planned for improvement provide the County with a reasonably sound secondary road system. Continued coordination of improvements with the Virginia Department of Transportation will be required on an annual basis to continually assess needs and priorities as they shift, based on future development patterns.

TABLE IV - 7

Average Daily Traffic on Primary Routes - Total

Route No.			1971	1976	1981	1989	1981-1989 % Change
17	Rt. 634, Caret	Tappahannock	4665	6275	5990	8255	37%
17 & 360	Tappahannock	Bray's Fork	8290	11620	11530	17190	49%
17	Bray's Fork	Rt. 684, Center Cross	3465	4555	4835	7180	48%
360	Rt. 624, W. Warsaw	Tappahannock	5035	6975	7010	9310	33%
360	Bray's Fork	Rt. 620, Miller's Tavern	3720	4090	5065	6900	35%

Mass Transit

As noted in Part II of the Plan, little potential currently exists for providing a cost-effective County transit system due to the very low levels of ridership which could be expected from a rural, scattered population. Nevertheless, the County should continually reassess potential to assist the transportation of disadvantaged residents of the County, should federal or state funding supports for such programs become available to institute limited transit program.

Airport Facilities

Current airport facilities are virtually precluded from expansion given the location of surrounding development.

The Tappahannock/Essex County Airport Authority is presently conducting a study to assess optional locations for a new County airport facility. This would be the first step in the process of determining if Essex County needs a new airport.

Should the Authority's study proceed to the next step which would be an economic study of a new airport facility, the County would need to become involved in the process.

Future industrial and commercial locations would be somewhat dependent on a future airport facility location.

Implementation

The Transportation Plan identifies both needs and planned improvements in order to create a transportation network that is consistent with the objectives and implementation of the Land Use Plan. The two major planned improvements for the planning period are the Tappahannock Bypass and relocated airport facilities.

The transportation plan cannot succeed without proper support and leadership from County government. The following implementation strategies establish the policy framework from which the County will create and maintain a functioning transportation system within the context of planned growth in the County.

Capital Programming — Capital programming has been recognized as a proactive way of avoiding some of the past transportation capacity problems. To ensure that opportunities for pre-planned expansion are not missed, the County will require the annual revision of the County's Capital Improvements Program to be coordinated with the Comprehensive Plan and any recommended amendments resulting from the annual review of the Plan and planning process. The County will need to monitor changing growth and development trends in the County and to advise the State Highway Administration accordingly. The annual process involving the County and VDOT will evaluate the relationship between the State's available resources and the demands upon the County's primary and secondary road systems created by proposed land uses and land use trends.

The County should begin platting rights-of-ways for new roads and streets when the land use patterns allow. This will permit the coordinated completion of road improvements if undertaken by different entities such as private developers. Attention to this effort should be focused on the areas designated Development Service District in the Land Use Plan where development impacts as roads systems are most likely to occur thru the planning period.

Maintain Coordination of the Land Use/Transportation Planning Process — Continuing emphasis should be placed on coordination between the County, VDOT, and MPPDC staffs on matters related to planning and programming improvements and transportation systems management. There are several steps that can be taken to improve the current transportation planning process: the State and County should work very closely together to evaluate the transportation system implications of the County's new growth plans; elected officials should be major participants in this process; and coordinated State and County transportation management policy should evaluate the need to expand upon the current level of commuter ridesharing in order to reduce single-occupant vehicles.

Quality of Service/Adequate Public Facilities Standards — The County's Level of Service (LOS) policies establish a recognizable basis for evaluating alternative plans and/or policies. LOS policies provide the basis and criteria on which to evaluate alternatives and to determine capital requirements. With establishment of LOS policies, the County makes a clear statement to developers and reflects the public's expectations about the quality of highway service it expects to achieve or maintain as growth occurs. With level of service established, the County then has a policy based, quantified capacity measure from which to assess the traffic impacts of new developments. Whether or not a particular development will generate traffic that will exceed the capacity of the road can be determined from analysis, and the question of road impacts is then no longer subjective.

Traffic Impact Analysis — As part of the Zoning process and implementation of the LOS Policy, the County in conjunction with the state should require a traffic impact analysis of all major new projects. This analysis will be used to determine if post-development traffic levels and patterns will be consistent with the County's Transportation Plan and highway policies and will minimize potential safety and congestion problems. At a minimum, the traffic analyses should include a description of past and present roadway conditions, existing roadway capacity, traffic accidents, existing and projected traffic volumes (ADT and peak a.m. and p.m. traffic), existing and projected levels of service, and existing and proposed sight lines based on facts and reasonable generation factors for the site and the immediately affected road networks and intersections. Where the County has short-term planned improvements scheduled, it may permit the development may include such improvements in the traffic impact analysis. The County should adopt precise standards for the preparation of these analyses.

Access Management — An access management program should be created, initiated, and supported by appropriate ordinances to ensure that access is not unnecessarily violated along key road links or near major intersections, particularly along the designated Highway Corridor Districts.

The following techniques should be considered in managing access to principal corridor roadways.

- Limit the number of conflict points by installing physical barriers, modifying driveways, and installing signals at driveways, etc.
- Separate basic conflict areas, by regulating the minimum spacing of driveways, by spacing driveways optimally in the permit authorization stage, by consolidating access for adjacent properties, by denying access to small frontage parcels, and by requiring access via collector streets, i.e. service roads, etc.
- Minimize the need to decelerate in traffic by geometrically designing access points.
- Remove turning volumes or queues from sections of the through lanes by pavement marking alterations, geometric design modifications, right-of-way acquisition (including acquisition for such techniques as constructing a service road or bypass road), or requiring adequate internal site circulation.
- Adopt guidelines for access type and minimum spacing of intersections.

Zoning and Subdivision provisions should require that development project design minimize left turn movements or conflicts both on the site and in the street.

Driveways should be designed to achieve clear sight lines based on design speeds as adopted by VDOT. Site access and circulation should conform to the following standards:

- Where reasonable access is available, the vehicular access to the site should be arranged to avoid traffic use of local residential streets situated in or bordered by residential districts.
- The road giving access to the site should have sufficient traffic carrying capacity and be suitably improved to accommodate the amount and type of traffic generted by the proposed development.
- Where necessary to safeguard against hazards to traffic and pedestrians and/or to avoid traffic congestion, the County should require that provisions are made for turning lanes, traffic directional islands, frontage/service roads, driveways, and traffic controls within the road.
- Access driveways should be designed with sufficient capacity to avoid queuing of entering vehicles on any road or street.

Commercial and Industrial Parks — Linear development should be discouraged and interior uses encouraged when developing in planned parks where access control is efficient and where interior roads, rather than arterial or collector roads provide access to each use. This land use technique will discourage shallow strip development. Much deeper commercial zoning permits affect site design and maximizes the use of each access point. Just as shopping centers, office parks, and industrial parks function on the basis of

a known location, so can general commercial uses. When between two to five commercial uses can use a single access, substantial improvement to the flow of traffic can result.

Highway Corridor Overlay Zoning — Overlay zoning brings to the area additional requirements and standards above those of the underlying zone. Special transportation related improvements in the Highway Corridor District shown on the Land Use Concept Plan should include access controls and transportation impact analysis for high-volume uses.

Integration of Land Uses — Integrating housing into overall design of large scale employment centers will help reduce the need to travel. Homes built within or immediately adjacent to the workplace not only reduce vehicles miles of travel, but also present opportunities for workers to walk or bike to work. Flexibility in zoning will be provided to permit such large scale mixed-use development through floating zones. To minimize noontime travel, the types of uses that should be permitted in a mixed-use project include retail and customer service activities, eateries, convenience retail, financial services, gas stations, photocopy centers and consumer merchandise.

Proffers — In terms of highways, the County will indicate the need for dedication of rights-of-ways for new roads, for road extensions, and to widen existing highways through the Transportation Plan and Capital Improvements Program.

Fiscal Impact Analysis — The development of a per-unit fiscal impact of residential and commercial development would provide a rational basis on which to except proffers from developers. It is intended that the fiscal impacts be calculated for roads. Though impact fees are not expressly authorized for Essex County, a detailed impact analysis will establish the basis for such fees if the County is in the future permitted to levy them by the State legislature. State enabling legislation does allow for the voluntary funding of off-site road improvements and reimbursements of advances by the governing body (Section 15.1-466 E of the Code of Virginia). The standards for determining the reimbursement in State law are basically the same as those that govern the development of impact fees. The fiscal impact analysis should be used as a basis for proffering under this statute. An Impact Fee system, requiring developers to pay for areawide transportation improvements based on the estimated amount of traffic their project will generate, should be evaluated.

Special Service or Taxing Districts — This approach should be used as a financing mechanism when service roads are needed to control access along a highway corridor or to facilitate future road improvements in the Development Service District.

Development of Local Circulation Plans — Developing traffic circulation plans for the Development Service District is needed to provide adequate traffic facilities and access control on a smaller scale.

Transportation Management Strategies — The County should encourage innovative mechanisms, including private cooperation, and financial support by developers and the business community which could be incorporated into financing policies. Transportation Management Activities (TMA's) have traditionally been a coalition of employers who

engage in a wide range of activities including the promotion of ridesharing, the purchasing of vans for vanpools, the financing of areawide street improvements such as signal upgrades, and even the planning for long-range transportation projects such as County Airport facilities.

Summary

Essex County's transportation needs within the next 20 years include a Route 17 bypass/parkway alternate route in the area near Tappahannock. An alternative airport facility location should also be selected after continued evaluation over the next five years.

Ongoing primary and secondary road improvement needs should continually be evaluated and scheduled in conjunction with the State Department of Transportation.

Finally, implementation techniques referenced earlier in this plan element should be considered for use when possible or appropriate to facilitate the conservation of highway capacity through development design, and to plan adequate highway improvements in advance of development, particularly within the Development Service District where greatest transportation impacts can be expected to occur.

COMMUNITY FACILITIES PLAN ELEMENT

Ensuring that the provisions of community services and facilities is phased with the demand or County needs is important to management of future County financial resources. Community facilities and public services are those minimum facilities and services the County provides for the common good. Generally, public facilities include land, buildings, equipment, and whole systems of activities provided by the County on behalf of the public. The quality of public facilities contributes to the quality of life in the County. Some facilities, such as clean drinking water and adequate sewerage disposal are necessities; others, such as parks, are highly desirable for quality of life enrichment.

Although the majority of the public facilities and services enjoyed by Essex County citizens are centrally located within the Town of Tappahannock, and in many cases shared with Town citizens, their future depend upon adequate planning by the County and are therefore vital to the Essex County Comprehensive Plan.

Unfortunately, the best projections do not always permit adequate forecasting as a basis for programming community facilities. By way of example, Essex County acquired 700 acres for long term landfill use but in recent years prompted by new state leachate control requirement must abandon its use due to costs to fully line the facility and treat residue waste. The County expects presently by 1994 to become a participant in a regional landfill facility managed through the Virginia Peninsulas Public Service Authority. In short, regulatory changes prompted major redirection by the County which could not have been anticipated. The lesson learned is that community facilities planning efforts will need to be continually re-evaluated during the planning period within the dynamic real estate market financial conditions, and regulatory climate with which Essex County will be faced. With this context in mind, however, several community facility improvement needs can be anticipated during the 20 year planning period.

This section of the plan will focus on identifying the issues and needs for selected services in the context of expected growth.

Sewer Facilities

The provision of sewerage and sewage disposal facilities is one of the most powerful growth management tools available to County policy makers. This is especially true in Essex County, where so much of the desirable residential property is unsuitable for development on septic tank disposal systems. The County's ability to grow depends, to a large extent, upon its ability to provide economical sewer service. If sewer capacity cannot keep pace, growth will be restricted in the current sewer service areas and in the Designated Development Service District (See Land Use Plan Element), and pressure for development in the rural area will increase.

The Town of Tappahannock's Sewer Facilities would seem to provide a basis for an

expanded sewer service area to be jointly planned, operated and maintained by the County and Town to sewer the County Development Service District. Within the 20 year planning period some 75,000 gallons of capacity would be required to treat waste generated by expected Town and adjacent Development Service District residential growth. Commercial and Industrial growth are more difficult to forecast as flow generation rates are often industry specific.

The County and Town should jointly undertake a Sewer facilities plan over the next few years to determine the feasibility of expansion of Town Sewer capacity and the best means of accomplishing such expansion. Such a study would evaluate the following:

- Sewer treatment capacity issues and discharge permit limitations
- Condition of the existing collection system and needed upgrades
- Forecast Residential, Commercial, and Industrial Waste treatment requirements over the 20 year period
- Forecast waste treatment needs beyond 20 years based on projected build-out within both the Town and surrounding development service district land areas
- Assess cost implications to provide service including cost of construction, operation, and maintenance of both treatment and collection systems.
- Ascertain how costs could most equitably be borne by the County, Town, developers and future users or supported by Federal or State grant or loan programs.

Absent a concerted program of Sewer facility expansion within the County development service district, County land use objectives to contain growth in serviceable form will not be accomplished and pressure for conversion of farmland in outlying County areas will increase over time. Therefore the recommended Sewer study is considered priority.

Water Facilities

The Town of Tappahannock currently provides the only public water system in Essex County. Water supplies appear suitable to support individual domestic wells in rural portions of the County given the low rate of household growth projected for these areas.

Public water supply system will be required however to support higher densities and non-residential uses expected to occur within the Development Service District. Again the Town system may provide a foundation to build on and expand service in to other district. Alternatively, the County may consider design of County operated facilities for water supply, storage and distribution in those areas.

Both alternatives should be considered with an assessment made of which alterative might prove to be most feasible and cost effective. Clearly, many of these costs should be borne

by future developers but the orchestration of needed investment in water systems will remain a County and/or Town responsibility. For these reasons, a systematic study of alternative means of providing for expanded water system needs is recommended as part of this plan.

Parks and Recreation Facilities

As noted in Part II of this Plan, Essex residents have for some time expressed interest in expanded recreational facility offerings. A survey of County residents distributed as part of this planning process reinforced community interest in greater recreation offerings.

Currently available park facilities include the County Park in Tappahannock, one public dock, and three locations providing limited access to the Rappahannock. The present County Park facility though small in size (under 2 acres) is unique for a County of less than 9,000 residents in providing a swimming pool. Activities at the park are well supported. These activities and others organized through the County include: Fun Day, splash parties, swimming lessons, water aerobics, special olympics, and special events. The County also organizes volleyball, little league basketball, aerobics, soccer, kite flying, and tennis. In spite of the success of these programs, existing facilities appear to be limited when judged against state standards for parkland.

The Virginia Division of Parks and Recreation (VDPR) has established a hierarchy of park types and general standards for each park type. These standards, found on pages 63-77 of the 1989 Virginia Outdoors Plan, give ranges for park size and service area and detail information regarding typical administrative responsibility, purpose, and character of the park type, general location recommendations, and facilities that should or could be in different types of parks.

The VDPR's established local recreation and park site standards (Table IV-8) call for at least 10 acres of recreation land for each 1,000 persons in a community, one-quarter of which should be for active recreation. This does not include large regional and State parks, golf courses and other special recreation areas, but does provide for all park needs at the neighborhood, community and district park scale. However, in counties such as Essex where the population density is not always great enough to feasibly meet the standards, more detailed geographic analysis would be required to better determine park needs. By first using the state park standards, the County can obtain general guidelines and can begin to prioritize or localize park needs. Parklands are generally operated by a government agency, but private neighborhood parks and playgrounds are becoming more common and can help meet the demands for those types of parks.

TABLE IV - 8
PARK STANDARDS

PARK TYPE	SERVICE RADIUS		MINIMUM SIZE (acres)	ACRES PER 1,000
	URBAN/SUBURBAN	RURAL		
Neighborhood	0.5 mile	1 -1.5 miles	5	3
Playground or Playlot	0.5 mile	--	0.25	--
Community	1 mile	3 - 7 miles	20	3
District	5 miles	10-15 miles	50	4
Regional	25 miles	25 miles	100	*
State	1 hour	50 miles	400	10
TOTAL				20

* Variable

Note: Definitions of park types can be found in 'The 1989 Virginia Outdoors Plan.'

Source: Virginia Division of Parks and Recreation, 1989

Utilizing these standards, the County should presently provide some 80 or 90 acres of parkland for residents use and over the 20 year planning period would establish an additional 10 acres.

Specific park improvements or facilities should relate to resident preferences or interests. A thorough needs survey and analysis is recommended to determine localized community need before attempting development of local parks or playgrounds. Centralized facilities and activities which have served the county-at-large have been supported and should continue. There are several areas of very popular activities which are not currently available due to lack of or limitations of adequate facilities. These areas are tennis and environmental activities. Due to the nature of these activities, prior to the creation of facilities, study should be made to determine if an area greater than Essex County could benefit from a facility and therefore cooperate in its creation.

Only 32 acres of the County landfill site have been actively used for solid waste disposal leaving substantial land area (650 acres +) available for use of some portion for Park use. Its central location and size suggest its use might be suitable for a district or regional park providing for both passive (nature trails, picnic facilities) and active (ballfields, tennis courts) facility improvements. The County may even consider transfer of portions of the property to the state for use as a state park facility.

In assessing needs for recreational facilities as indicated earlier, the County should also investigate demand for waterfront park facility development to take greater advantage of one of the County's greatest resources, the Rappahannock river which is designated a state scenic river.

The 1989 Virginia outdoors plan had the following to say concerning this topic:

> Although Region 8 is rich in water resources, public access to them is inadequate and needs to be substantially increased. In all instances where public highway crossings are scheduled for renovation or relocation, the potential for providing parking areas and boat access facilities should be evaluated.
>
> A Public Fishing Lake in Essex County is needed to meet the demand for freshwater fishing in this region.
>
> Additional public water access areas for beach use need to be acquired and developed wherever possible in the Tidewater Region.

The following implementation recommendations list a variety of techniques that the County can use in order to achieve objectives regarding recreation and open space and which should be considered when undertaking future study of Park & Recreation facility needs:

- **Evaluation** - The County should first evaluate the status of recreational facilities and programs to determine if available facilities and programs are meeting the communities' recreational interests and if park designs and program creativeness provide challenge and self-renewal to the user. This can be accomplished through a survey of County citizens and facilities users which identifies specific types of recreational facilities or offerings are of interest to them before parkland is either acquired or planned for specific facilities.
- **Parks and Facilities Distribution** - Available parks and park types need to be distributed proportionally around the County such that the needs are located where the users reside.
- **Environmental Awareness** - Increase promotion and awareness of the natural environment through nature interpretation and nature oriented facilities which can emphasize the importance of the environment, show how man can coexist with nature, and educate residents on how to protect and conserve natural resources.

- **Special User Groups** - The County should ensure the availability of a variety of programs for people of all ages and for special user groups such as the physically disabled.
- **Creativity** - The County should design creative programs and facilities which provide challenge and self-renewal to the user.
- **Technical Assistance** - In order to maximize facilities' use, involve individuals from special interest groups, such as a senior citizen or a physically disabled person, who can provide technical assistance with recreation program and facility planning.
- **Consulting the Virginia Department of Conservation and Recreation** - Take advantage of recreation consultation and workshops offered by the Department of Conservation and Recreation to become better informed about how to streamline local departmental operations and best methods of developing, operating, and maintaining park and recreation programs.
- **Land Acquisition** - In order to ensure that public recreational land is available when needed, the County should acquire or manage lands with significant conservation or recreation value before encroaching development and rising land values precluding this possibility. This includes such methods as the County reaching an agreement with utility companies in which the use of utility easements as potential outdoor recreation and open space areas (e.g. hiking and equestrian trails) is encouraged.
- **Federal and State Assistance** - Seek Federal and State assistance to secure both Community and Regional Park sites and facilities at a scale necessary to meet the demands brought on by County growth.
- **Virginia Outdoors Fund** - Apply for Virginia Outdoors Fund monies to assist in acquiring and developing recreational lands.
- **Land Contracting** - Explore land contracting options that allows the County to purchase land today if necessary, but pay for it over a protracted period of time. Annual payments, as opposed to a lump sum payment, creates certain tax advantages for the seller while eliminating the necessity of the County government needing to raise the entire purchase price at one time.
- **Alternate Density Zoning** - Encourage developers to utilize alternate density zoning by reducing lot size and/or consolidating lot layout in order to provide compensating amount of open space within the subdivision. Although no increase in the number of lots is allowed, consolidation of layout can save the developer utility costs and the County acquires significant open space at no cost.
- **Dedication or Payment-In-Lieu** - To support County recreation facility acquisition and improvement needs, require dedication of public park space or payment-in-lieu of dedication by large-scale developments.

- **Neighborhood Parks** - Within the Development Service District encourage developers to design subdivisions whose central theme is the neighborhood park that includes a playground apparatus, open space and a hard-surface activity area.
- **Shared Use** - Promote shared use of facilities by two or more governmental agencies and by the public and private sectors to maximize utilization of existing facilities and minimize costs of building and/or maintaining duplicate facilities.
- **Local Participation** - Identify and draw into recreational programs individuals and groups with abilities in devising and leading unique recreational opportunities for local citizens.
- **Land Use Assessment Law** - Ensure citizen awareness of Land Use Assessment Law which allows land to be taxed at a rate based on its current use, i.e., open space, rather than its best or potential use. This would encourage private property owners to preserve open space as a visual amenity.
- **Residential Institutions** - Require residential institutions, such as nursing homes and mental institutions, to provide on-site passive and active outdoor recreational facilities. It is important that a variety of readily accessible resources and opportunities to enjoy the outdoors be available to the residents as many of those individuals may rarely, if ever, leave the facility where they reside.
- **Chesapeake Bay Youth Conservation Corps** - Help maintain park and open space lands that are in the Chesapeake Bay watershed through employment of youths with funding in the form of grants awarded by the Chesapeake Bay Youth Conservation corps. This labor intensive program requires that 75% of all grant monies be expended in wages.
- **Volunteer Program** - Establish a volunteer program such that the Parks Authority can have an increase in manpower at a minimum cost, the community benefits from the citizen involvement, and the volunteer can gain job experience as well as become aware of the problems and rewards associated with community park and recreation work.
- **User Fees** - Expand on the system of user fees which generate revenues to assist in supporting park maintenance, operational costs and facility improvement needs. A study would be required to determine which facilities and programs should charge a user fee and how much that fee should be.
- **Tourism** - Capitalize on tourism in the area through publication of recreation site locations and activities, public waterfront access locations, and programs and events to be held in the County.

Solid Waste

As noted earlier use of the County landfill is expected to be curtailed by 1994 with an alternative solid waste program to be developed through the Regional Public Service Authority. The Town has recently provided land for County development of a transfer station/recycling center. The County should work with the P.S.A. to determine the best means of restructuring the existing Solid Waste Program to assure Waste handling and transfer stations are located to meet the needs of County residents.

Recycling efforts already underway should continue to be explored to extend the expected life of the future regional landfill, and reduce future waste handling costs.

Law Enforcement/Emergency Services

Standards for law enforcement personnel requirements for Counties with a population under 10,000 indicate the number of personnel typically ranges from 1.5 to 3 employees per 1,000 population. The combined personnel of the Sheriff's department, town police department, together with four State Police assigned to the area indicate a total of approximately 21 personnel suggesting law enforcement resources are presently adequate. It is likely two additional officers will be required during the planning period.

Currently, facilities and manpower resources supporting Fire and Rescue services also appear to be adequate at the present time with 54 volunteer firemen and 37 members within the rescue squad. Services are most adequate near the Town where facilities exist. If substantial growth occurs outside the Town and County development service district in future years, expansion of fire protection facilities may need to be provided in other County areas.

Government Administrative Facilities and Library

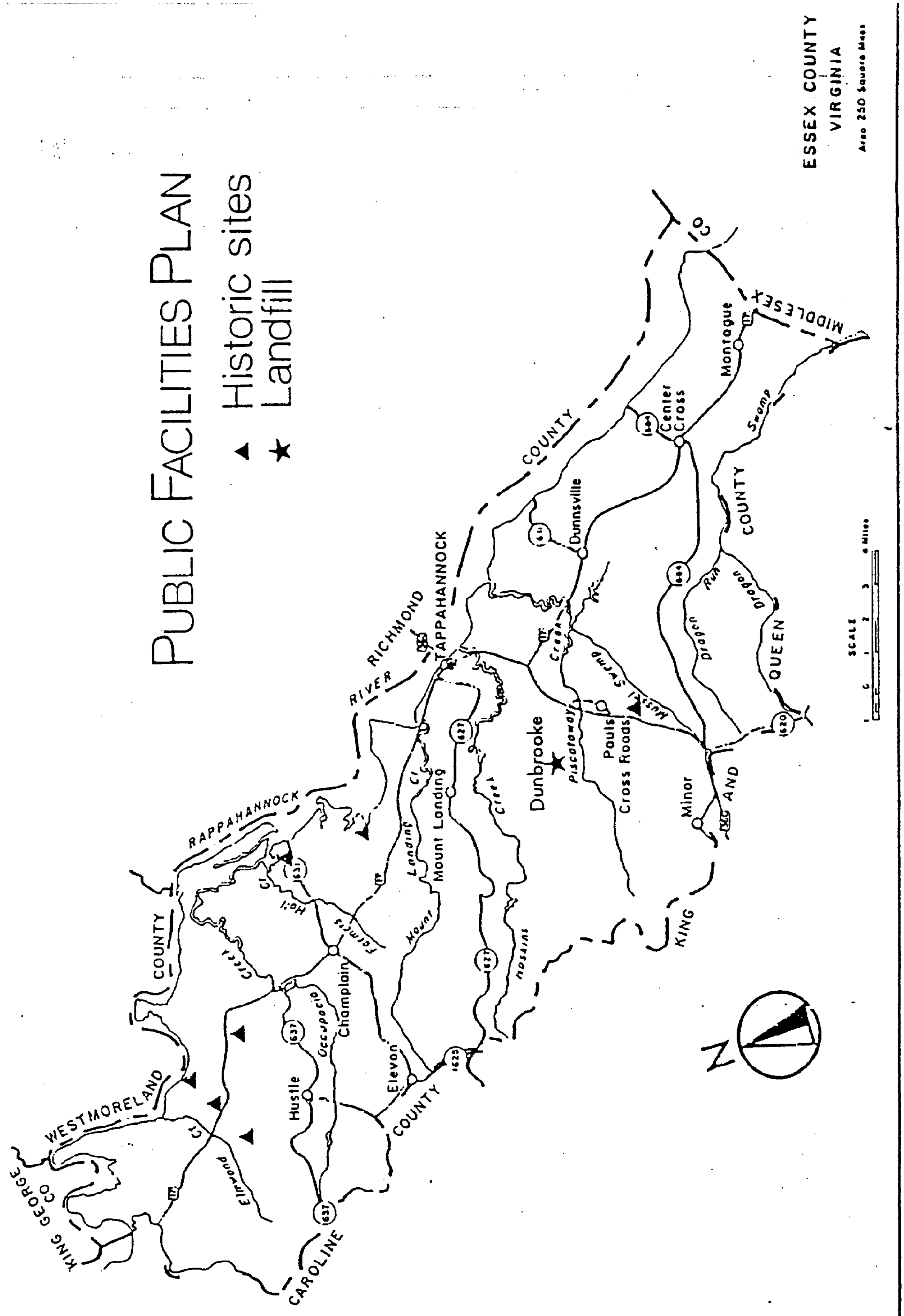
With renovation and reuse of the old elementary school in the 1980's, office and meeting space conditions of County government have been greatly improved. Likewise library facilities relocated to the former kindergarten building permitted their expansion in the early 80's. During the planning period the library collection should be expanded from 17,000 volumes to keep pace with projected growth.

Moreover, an additional 1,000 to 1,500 square feet of office space may be needed over the 20 year period as office space for general government facility use based on a review of standards typically applied for such facilities. A committee has recently been established to explore alternatives to improve County Government office space facilities which have proven inadequate in recent years. As options are explored to meet future administrative office needs, consideration should continually be given to how government functions have or will evolve. When possible, the County should attempt to house related functions together.

Historic and Cultural Resources

Another area for future planning consideration which has not yet been dealt with is County historic sites. Although there are many homes and sites of historic significance, for purpose of this Comprehensive Plan, only those registered with the Virginia Historic Landmarks Commission are recognized. These historic sites are located on Map IV-3. They include: Brooks Bank located east of Loretto; Vauters Church and Elmwood at Iraville; Glencairn near Chance; Glebe House of St. Anne's Parish located east of Champlain; Blandfield, east of Caret; and Woodlawn on Route 360 between Pauls Crossroads and Millers Tavern.

It is the recommendation of this plan, that until such time as development activity threatens the character of these sites, the County should not adopt specific historic site protection regulations. However, support should be given to efforts by the individual owners to preserve and enhance these sites as they are to the benefit of the County as a whole. Moreover, most of those sites are concentrated at the north end of the County which will be afforded some protection with creation of the Agricultural Preservation District (See Land Use Plan) through the low residential densities proposed for this new district.


PUBLIC FACILITIES PLAN
▲ Historic sites
★ Landfill
ESSEX COUNTY
VIRGINIA
Area 250 Square Miles
MAP IV-3
RAPPAHANNOCK
RIVER
RICHMOND
COUNTY
TAPPAHANNOCK
WESTMORELAND
COUNTY
KING GEORGE CO
CAROLINE
COUNTY
KING AND QUEEN
COUNTY
MIDDLESEX
CO
Center Cross
Montague
Dunnsville
Dunbrooke
Pauls Cross Roads
Minor
Mount Landing
Champlain
Hustle
Elevon
Occupacia
Elmwood
Farmers
Hoskins
Piscataway
Mussel Swamp
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SCALE
N

NATURAL RESOURCES PROTECTION

AND

CHESAPEAKE BAY PRESERVATION AREA

PLAN ELEMENT

Discussion of how Essex County proposes to manage components of the County's natural environment, through the final plan element is clearly not of least import. The County's natural environment, it's wildlife, steep slopes, masses of forest cover, riverfront and tributaries all literally define the County. As such they reflect the character and culture of the County. Traditionally, farm and forestlands formed the basis for virtually the entire community economy. As such the need and interest in protection of this resource trust cannot be overstated.

Protection of natural resources is protection of each of its components. The parts in turn protect the whole. As Aldo Leopold once said: "The first rule of good tinkering is to be certain to keep all the pieces."

The Chesapeake Bay Preservation Act

The Chesapeake Bay Preservation program launched by the state in 1988 establishes a baseline for protection of County resources whose disturbance or overutilization can and often have adversely impacted water quality in those Bay system tributaries that border and penetrate the County.

In response to recent interstate regional agreements between Virginia, Maryland, Washington D.C., and Pennsylvania to clean-up the Chesapeake Bay, the State of Virginia has adopted the Chesapeake Bay Preservation Act which mandates all Tidewater Virginia localities to establish program, plans, and ordinances to protect and improve Bay water quality. These "local programs" must be in conformance with the Chesapeake Bay Preservation Area Designation and Management Regulations adopted by the Virginia Legislature in September, 1989.

Purpose of the Act

The purpose of the regulations is to protect and improve the water quality of the Chesapeake Bay, its tributaries, and other state waters by minimizing the effects of human activity upon these waters and implementing the Chesapeake Bay Preservation Act, which provides for the definition and protection of certain lands called Chesapeake Bay Preservation Areas, which if improperly used or developed may result in substantial damage to water quality of the Chesapeake Bay and its tributaries.

The regulations establish the criteria that Essex County has used to determine the extent of the Chesapeake Bay Preservation Areas within its jurisdiction. The regulations establish criteria for use by the County in granting, denying, or modifying requests to rezone, subdivide, or to use and develop land in Chesapeake Bay Preservation Areas. Regulations identify the requirements for changes which local government like Essex must incorporate into their comprehensive plans, zoning ordinances, and subdivision regulations to protect the quality of state waters pursuant to the Chesapeake Bay Preservation Act.

The purpose of the Essex County Chesapeake Bay Preservation Program Comprehensive Plan Element is to collect and analyze data, explore issues and alternatives, and develop policies and implementation strategies, providing a basis to take local action to protect and improve the water quality of the Chesapeake Bay, its tributaries, and other state waters.

Data Collection and Analysis

The Chesapeake Bay Preservation Program for Essex County relies on the collection and analysis of water and land use data and characteristics. The information sources utilized for the adoption of the program are those which are the best in accuracy and currently available. Recognizing that in some areas data may be incomplete or on a reduced level of accuracy, the County, in conjunction with the Chesapeake Bay Local Assistance Department (CBLAD) and the Middle Peninsula Planning District Commission (MPPDC), will strive to produce future inventories and studies to best reflect the current and changing characteristics of the lands and waters.

The goal of the inventory of natural and manmade features is to identify the areas within the County which require and should be considered for preservation under the Chesapeake Bay Preservation Act (CBPA) regulations. These areas include: tidal wetlands, nontidal wetlands connected by surface flow and contiguous to tidal wetlands or tributary streams, tidal shores, floodplains, highly erodible soils, highly permeable soils, other nontidal wetlands, and other lands whose characteristics may have a significant impact on water quality protection.

Essex contracted with the MPPDC to produce an inventory of the land categories identified above. The MPPDC utilized the following information sources in conjunction with an

automated geographic information system to analyze, compile, and map the inventoried features:

- United States Geological Survey - Digital Line Graph: includes tidal wetlands, tributary streams, tidal shores, roadways, and county boundaries.
- U.S. Fish and Wildlife Service - National Wetlands Inventory: includes tidal and nontidal wetland and classification of each.
- Virginia Geographic Information System - Digital Information of the U. S. Department of Agriculture Soil Conservation Service Soil Survey of Essex County, Virginia: includes soil characteristics necessary to determine permeability and erodibility of soils.
- Federal Emergency Management Agency - Flood Insurance Rate Map: includes 100-year event floodplain for Essex.

The MPPDC has published the Comprehensive Water Quality Management Plan for the Middle Peninsula which provides analysis, and policy review concerning water quality issues in the region. Specifically, the two elements of the Management Plan provide information relevant to Middle Peninsula localities' on-site wastewater treatment, potable water supply, boating facilities, living resources, waterfront access, existing land use and water quality (including pollution sources), and a general description and economic analysis of the region.

Other documents referenced directly or through familiarity include the CBLAD's Local Assistance Manual: the Virginia Institute of Marine Science's (VIMS) Shoreline Situation Report for Essex County; and other federal, state, and local studies.

Resource Protection Areas

Resource Protection Areas (RPAs) perform natural pollution control functions. Biological activities and physical characteristics in these areas are especially effective in controlling runoff, trapping sediment, and recycling nutrients and pollutants. Components of RPAs are certain wetlands, tidal shorelines, and buffer areas.

Wetlands benefit water quality by acting as a filter in trapping and holding nutrients, microbes, and other pollutants which come from upland runoff. Wetlands also act as a sponge by slowing down fast moving erosion water, absorbing the energy of it for flood control and storm damage protection, and acting as a buffer against coastal erosion from wave action.

The tidal shoreline interface where water meets the land is the scene of dramatic changes caused by the natural forces of wind and water. Tidal shore stability is generally governed by three main determinants; the amount of beach material, the intensity of natural and human forces, and the stability of sea level. The occurrence of tidal shore erosions is

considered a natural process and becomes a serious problem only when human structures and activities unnaturally intrude into this process.

Buffer areas are zones of undeveloped vegetated land that are managed to reduce the impact on water quality of land disturbing operations in adjacent areas. Vegetated buffer areas provide a wide variety of environmental benefits, including sediment control, nutrient assimilation, stream back stabilization, in-stream temperature maintenance, flood control and protection, groundwater recharge area protection, and runoff volume reduction.

The components of the RPA are prescribed by Virginia statute, with the local option to include other lands which RPA designation is necessary to provide a high level of protection to the quality of state waters.

Essex County has designated a RPA which consists of all tidal wetlands; nontidal wetlands, including impounded lakes and ponds connected by surface flow and contiguous to tidal wetlands or tributary streams; tidal shores; and an additional buffer area of 100 feet in width, except where reductions are allowed within its jurisdictional boundaries. The extent of the County RPA is shown on MAP II-4 (Part II of this Plan). The RPA serves the purpose of protecting environmentally sensitive land and water areas from the adverse effects of human activities to thus improve and protect the quality of water both locally and regionally.

The intent of RPA designation is to limit land disturbance and development to only those activities classified as "water dependent" or otherwise exempted in the County Chesapeake Bay Preservation Area Overlay Zoning District. The integrity of the RPA and associated mechanisms with the CBPA Program will serve the goal of preserving those features most associated with the high standard in quality of life in Essex County, namely clean water and attractive landscapes for the beneficial use by both society and the natural ecosystem.

The implementation of the RPA goals will be through an overlay district of the Essex County Zoning Ordinance. The zoning ordinance will include a general designation RPA map in addition to the performance criteria to be included on specific site plans. The subdivision, erosion and sedimentation control, and floodplain ordinances will also include provisions related to preserving water quality as related to CBPA. To truly provide for successful implementation, it is necessary to improve the capacity of both the county staff and general public through supporting educational opportunities related to Chesapeake Bay Program enforcement and management.

Resource Management Areas

The Chesapeake Bay Preservation Act and Criteria Regulations establish the Resource Management Area (RMA) as the landward component of Chesapeake Bay Preservation Areas. Lands to be considered for designation as RMA include the following: nontidal

wetlands, floodplains, highly erodible soils, highly permeable soils, and other lands at local discretion.

RMAs are important in terms of water quality primarily because if improperly used or developed, they could release significant amount of non-point source pollutants into the surface and ground water systems. The regulations do not limit the types of land use and development that may occur within the RMA. Instead, a variety of performance criteria will be applied to any use or development within RMAs to ensure that those land disturbances that do occur will minimize the adverse impact on water quality. The performance criteria apply to stormwater management, on-site sewage disposal, and land disturbance/stabilization.

The designation of RMAs in Essex County has been based on the consideration of the sensitive land types listed above and described below.

Floodplains are areas which are subject to predictably recurring overflows form nearby bodies of water, including streams, rivers, bays, and oceans. A floodplain acts as a natural reservoir for such an overflow by storing excess water and thus reducing the volume and speed of the flood water's effects downstream. The removal of natural vegetation through land development within a floodplain diminishes the natural flood control capacity of the area. The result can be an increase in non-point source pollution of the water body through severe soil erosion.

Highly erodible soils, if improperly disturbed or exposed, can contribute to water quality degradation through sedimentation and siltation of water bodies. In addition, nutrients and toxics may be attached to soil particles which can be transported and released to the aquatic environment through erosion.

Highly permeable soils transmit water at such a rate that there is a potential for surface pollutants such as nutrients and other chemicals and sewage wastes to infiltrate, undegraded, into the nearby surface water and groundwater systems. This possibility of the highly permeable soil becoming a "highway" for pollutants indicates the need for management of development in these areas.

County designation of other lands to be included in the RMA classification is based on several factors, including the distribution of the other land types listed above, the hydrology of the locality, and the general characteristics of the landforms in the locality. The regulations of the CBPA also require the RMA to be contiguous to the RPA.

Essex County has chosen to designate the entire County as a Resource Management Area (RMA). The extent and distribution of the land features considered as RMA components are such that few areas of the County are lacking in these features. It is also recognized that all lands within the County are contained with the Chesapeake Bay watershed and activities upon these lands can act to impact the water quality of the Bay. In order to maintain the goal of high water quality within the County and region, the policy of the County is to include all lands as RMAs when those lands are not designated as RPAs.

The implementation of the RMA goals will be accomplished by specific provisions in the County zoning, subdivision, erosion and sedimentation control, and floodplain ordinances. Implementation will also rely on an effort to improve the capacity of staff and general public through supporting educational opportunities related to managing and enforcing the Chesapeake Bay Program.

Development Suitability

The lands and waters within Essex County are varied in characteristics and natural function. Features such as topography, hydrology, soil type, vegetation, and geographic location all serve to influence land development. With the advances in construction methods and materials and sewage disposal technology together with the increase in population and property values, land which once may have been considered undevelopable is being engaged for development pursuits.

The Chesapeake Bay Preservation Act has highlighted the concern for land disturbing activities which cause water quality degration through non-point source pollution. In addition, the use of methods of limiting or preventing non-point source pollution, such as Best Management Practices (BMP's), indicate that there are reasonable means to reasonable development. To further explore the compatibility of development to the land site, an additional step of analyzing the suitability and capacity of the site is needed.

Perhaps the most obvious factor to consider when analyzing a site for development suitability is the characteristics of the soils present. Soils play the important role of determining weight loading capacities, on-site sewage treatment assimilation, erosion potential, and vegetation growth.

An additional factor of importance is the location of "poorly" or "marginally" developable soils in relationship to streams, water bodies, and wetlands. Development on such soils, in close proximity to designated RPAs, can produce negative impacts on water quality.

A development suitability analysis can provide the necessary detailed information on both the most and least desirable portion of a parcel for development. With this information in hands, the County and the land developer can arrive at the development solution which presents the highest compatibility between the use and the environment.

Consideration has been given to the extent of analysis needed to determine the suitability of a site for development. A detailed, site-specific soils survey would provide the information necessary to match the suitability with the uses proposed for the site. The topography and hydrology of the site should be of a detail such that overland sheet flows of stormwater can be predicted. A knowledge of the vegetation and wildlife habitat is important for a site as well as for the surrounding areas. The comprehensive analysis of all these features can lead to development sensitive to the natural resources of Essex County.

To preserve the development rights of land owners, options to mitigate impacts and utilize BMPs should be allowed. It is envisioned that the level of detail of the suitability analysis will provide the owner with the information to balance the management options presented by the site.

Essex County has determined a comprehensive development suitability analysis to be necessary to the optimum function, design, and environmental preservation of land development sites. The comprehensive development suitability analysis should include a detailed inventory of soils with the capacities for on-site sewage treatment, erosion potential, and vegetation growth documented. Discussion of wildlife habitat and other significant environment should be included. Mitigating factors, such as the use of BMP's should be included. This analysis should be conducted for all proposed development exceeding 10,000 square feet in land disturbance within Chesapeake Bay Preservation Areas.

The requirement to conduct a comprehensive development suitability analysis will be implemented through the County's plan of development procedures, including zoning and subdivision ordinances.

Drinking Water Management

The Coastal Plain aquifers of Virginia provide the groundwater for domestic and industrial uses. An aquifer is layer of soil media, such as gravel, sand, shell, or rock, in which usable amounts of water can be found. The aquifers are separated from each other by confining layers of rock or clay which retard the vertical movement of water. The upper aquifers are used primarily for domestic purposes because of lower yields. These are the Yorktown-Eastover and the Columbia aquifers. High yield can be found in the artesian aquifers known as the Chickahominy-Piney Point and Aquia aquifers. Sufficient groundwater quantities for subdivision, light industry, and agriculture uses can be tapped in these layers. The lower three aquifer layers, the Brightseat-Upper Potomac, Middle Potomac, and Lower Potomac, can supply large amount of water; however, the quality is impaired by high concentrations of minerals and chlorides. Based on the capacity of each of these aquifers, Essex shows a good potential for future development utilizing groundwater.

The types of land uses and the practices in an areas can affect the quality of both surface and ground water supplies. Runoff from lands adjacent to surface water reservoirs can contain chemical and biological contaminants. Pollutants can originate from agricultural practices, residential lawn care, pesticides, petroleum spills, and failing septic systems. Groundwater can be contaminated by these sources by infiltration through the soil to the water table. Other groundwater contaminant sources include leaking underground petroleum storage tanks and improperly designed landfills. One significant pollutant of groundwater is nitrate. Nitrate can come from a variety of sources including fertilizers, animal wastes, and septic systems. From the types and sources of contamination of

drinking water supplies, it is evident that responsibility lies among the many parties: residents, businesses, industries, farmers, and governments.

A priority in the protection of groundwater is the understanding of the movement and recharge in the aquifer, the movement of pollutants, and the effect of high withdrawal rates. This can best be accomplished under the modelling studies conducted by the U.S. Geological Survey (U.S.G.S.). There should be attempts to secure adequate funds to cooperate with the U.S.G.S. in such a study effort in the Middle Peninsula region.

Wellhead protection areas would be identified utilizing future studies by the U.S.G.S., a DRASTIC mapping project, or the presence of highly permeable soils in the vicinity of water wells.

Once critical drinking water management areas are identified, an overlay zoning district or alternative measures could be designed to limit land use practices which could affect drinking water quality.

Fisheries Protection

The living resources of Essex are directly related to and dependent upon the vast water systems within the ground and above the surface. The surface water holds a treasure of commercial fisheries as well as sport species. Those creatures not directly useful to humans are inseparably linked to those which are through food chains and chemical processes which drive the ecosystem. A disruption in this system can cause far-reaching effects, threatening the livelihood and health of those dependent upon these resources. Groundwater travels slowly through the unconsolidated soils of the region, making its way to the surface springs and wetlands. Along the way, contaminants from the land can be swept along the groundwater and find their way into the open water systems. Based on these observations, two things are evident. First, there are direct relationships and pathways between the uplands, wetlands, and water bodies as well as the inhabitants of each. A second fact is that a number of small, seemingly insignificant environmental degradations add and multiply in overall impact and damage.

Since an entire watershed or creek can impact shellfish growing water quality due to non-point pollutants, the entire land area should be subject to reserve drainfield and five-year pump-out requirements for on-site sewage disposal systems. Aquaculture projects, including shellfish depuration facilities, should be considered "Water Dependent Facilities" for purposes of compliance with local land use ordinances. Waters presently approved for the harvest of shellfish should be protected from degradation due to pollution from point and non-point sources by including surrounding lands in Chesapeake By Preservation Areas.

Shore and water habitat are important both to wildlife and water quality. As land disturbance and sewage wastes increase with the development of residential and

commercial uses, the impacts on these habitats also increase. Two areas of particular concern are the loss of fishery habitat and the restriction of shellfish harvesting waters.

The County Chesapeake Bay Preservation Program offers an opportunity to incorporate fisheries protection measures in local land use ordinances. the designation of Chesapeake Bay Preservation Areas will offer protection to wetlands and other shallow water habitat vital to fisheries. In addition, requiring reserve drainfield areas and five-year pump-outs for septic systems should reduce pollutants contributing to restrictions on shellfish harvest.

The Essex County Zoning Ordinance will incorporate the performance criteria related to the CBPA, including those which aid in the protection of commercial and recreational fisheries. The studies of critical fisheries habitat related to expanding Preservation Areas or watershed planning will be pursued as part of assistance programs provided by the CBLAD.

Waterfront Access and Boating Facilities

The Rappahannock River, tidal waters, and flowing streams of the County are resources belonging to the citizens of Virginia. The use of these waters for recreation and commerce are traditional and acceptable as the economic base for the area. With the subdivision of large tracts of waterfront property into numerous smaller lots, each under private ownership, comes the competing interests of those owners seeking privacy and the upland residents and tourists seeking use of the waters. The increasing use of waterways leads to concern of environmental damage due to improper or reckless activities causing pollution or habitat destruction. This concern leads to the need of greater management capability over waterfront access and uses.

There are two broad uses involved in the waterfront issue. First, the use of the waterfront for boating access, whether it be at a marina, a boat dock, ramp and pier, or car-top boat landing. Second is the utilization of the shoreline and near-shore areas for recreational activities such as swimming, bank fishing, nature studying, and picnicking. Either public or private facilities can provide these activities. Both boating and shore recreation are allowed exemption as "water dependent facilities" under the requirements of the CBPA, provided that non-water dependent components are located outside of the RPA.

Boating access to the tidal waters of Essex County is provided at several public docks and ramps, several private marinas, and by individual or community piers.

With the demand and subsequent subdivision of waterfront property comes the increase in piers and docks associated with waterfront housing construction. In some areas, individual private piers have proliferated. Some subdivision developments have provided a community docking facility to serve the needs of all residents including both waterfront and landlocked homeowners. This option eliminates the numerous private piers and consolidates all boating activity to one area and under a single management

structure; however, there may need to be limits and controls on the size and operation of such a facility.

Waterfront recreation areas are also provided through public and private avenues. Public beaches and parks are options for recreation and nature study. Private recreation areas can also be found in some residential developments, usually in conjunction with a community boating facility. The management of waterfront access options and opportunities concerns the competing interests and costs of public facilities and private facilities and the protection of the environment. Public and private access to the water and shoreline areas are important to the economy and environment of Essex County.

Essex County has determined that boating facilities should be located only where: there is sufficient water depth, without frequent dredging; there are not public or private shellfishing grounds which would be impacted; there is adequate tidal flushing; there are suitable soils for sanitary facilities or connection to a municipal sewer system; there is limited harm to fish and wildlife habitat; and there are compatible existing land and water uses nearby.

Existing marinas and boat repair facilities should adopt operational procedures consistent with BMPs. When existing marinas remodel or expand their facilities, structural BMPs should also be constructed. For proposed boating facilities, BMPs should be required as a condition of development.

The County supports the use of community boating facilities within major residential waterfront subdivisions as a preferred alternative to the use of individual waterfront lot piers. By the development of community boating facilities, maintenance and control can be assured by utilizing a homeowner's association (HOAs). The HOA should be responsible for assuring that only members or bona fide guests be allowed to use the slips or mooring at such a facility. In no case should overnight occupancy of boats be allowed unless the facility maintains adequate provisions for toilets, showers, and holding tank pump-out.

The County should study the needs for waterfront public access in conjunction with state, federal, regional, and private agencies. The Planning District Commission should be encouraged to assist local efforts in planning water access, open space, and park facilities which will benefit education and habitat vital to water quality. In addition, when regional projects such as a regional airport, park, or solid waste landfill are being planned, there should be an open space/recreation/natural habitat component included in the development.

Existing Pollution Sources

Pollution discharges can be defined as either point or non-point in their origin. Point source inputs represent discharges from discrete and identifiable points, i.e., discharge pipes, and play a major role in determining the quality of surface waters. Such sources

include both municipal and industrial dischargers which may contain an array of toxic and nutrient material. Often these discharges tend to vary in chemical and physical composition as well as fluctuate in their concentrations. The resulting impact to surface water could easily set up menu of scenarios depending on receiving water conditions. The other major category of physical, chemical, and biological factors impacting surface water quality is known as non-point sources. This category is by far the most significant in terms of its impact to surface water quality in the Middle Peninsula Planning District. Basically, non-point sources encompass all those inputs to surface water which cannot be identified as having originated from a discrete discharge point. Nationwide, non-point source pollutants are responsible for 73% of the oxygen demand, 84% of the nutrients, 98% of the bacteria counts, and 99% of suspended solids.

The Virginia Water Control Board (VWCB) regulates existing point source pollution dischargers. Essex has little role in the enforcement of existing permit conditions however, compliance is tied to land use ordinance approvals.

The County Chesapeake Bay Preservation Program, Erosion and Sedimentation Control Ordinance, and participation in the activities of the local Soil and Water Conservation District are means of local management of non-point source pollution.

A periodic review of the effectiveness of these local ordinances can determine where changes or amendments may be needed to achieve the goals of reducing non-point source pollution. To that end, the County should review all land use ordinances at least every five years to determine the best means to effective management of point and non-point source pollution sources. The County will also seek assistance from the Chesapeake Bay Local Assistance Board (CBLAD), VWCB, Division of Soil and Water Conservation, MPPDC, and other state and federal agencies to produce an inventory of land uses at such a degree of accuracy so as to provide management and modelling parameters necessary for effective control of pollution sources in the future.

Redevelopment of Intensely Developed Areas

The designation of Intensely Developed Areas (IDAs) is intended to address the unique land use patterns and water quality impacts of heavily urbanized areas. Such areas although not presently identified in Essex County are characterized by industrial, commercial, residential, and institutional uses which are spatially concentrated, heavily trafficked, and largely devoid of natural vegetation. Development within these areas is usually confined to either redevelopment of previously developed sites or construction on small, vacant, or "infill" parcels. The concentration of intensive uses and prevalence of impervious surfaces in these areas contribute a variety of non-point source pollutants, such as hydrocarbons and heavy metals, to surface waters.

The goal of designating IDAs is to focus development in areas where it is already concentrated and supported by existing infrastructure, while improving water quality. In recognition of the fact that the IDA is largely devoid of natural vegetation, activities within

the IDA may be exempt from having to establish or maintain the full buffer areas within RPAs.

The CBPA regulations provide that IDAs may be designated in "areas of existing development and infill sites where little of the natural environment remains..." and "...provided at least one of the following conditions exists:

A. Development has severely altered the natural state of the area such that it has more than 50% impervious surface;

B. Public sewer and water is constructed and currently serves the area. This condition does not include areas planned for public sewer and water;

C. Housing density is equal to or greater than four dwelling units per acre."

The designation of IDAs is intended to allow reasonable development where development already exists or surrounds a site, while at the same time providing at least a 10% reduction in stormwater runoff transported pollutants. This reduction can be achieved through a variety of means, including: creation of vegetated buffer area to the greatest extent possible, reduction of impervious areas, and use of water quality BMPs.

The identification of areas which qualify for IDA designation in Essex County has revealed insignificant land area to justify the delineation as part of the local Chesapeake Bay Preservation Program. Individual hardship cases can be handled through the present exception and variance procedures outlined in the County Zoning Ordinance.

Though not identifying areas for IDA designation at the present time, the County reserves the option to make such designation in the future should the need arise and conditions of an area justify such designation consistent with the intent of the Chesapeake Bay Preservation Act. Should such designations be made in the future, the implementation of the IDA development and redevelopment standards will be accomplished through the application of the zoning, subdivision, and erosion and sedimentation control ordinances and the plan of development procedures of the County.

Local Program Development

The performance criteria for land use and development established in the County Chesapeake Bay Preservation areas overlay zone district are currently being reviewed by the State prior to County adoption. They are hereby referenced as part of Essex County's Comprehensive Plan. In addition to designation of County Chesapeake Bay Preservation Areas, the County will incorporate resource protection criteria into its subdivision regulations, and erosion and sediment control ordinance. The County will also establish a plan of development review and approval process for building permit issuance for development within designated Chesapeake Bay Preservation Areas. The County will also establish administrative and enforcement procedures as part of its overall Local Program for Chesapeake Bay Preservation.

Implementation

The following is a list of specific measures the County should undertake to achieve its environmental quality goals and objectives set forth in Part III of this Plan:

- The County should adopt a Local Program for Chesapeake Bay Preservation which contains the program elements and performance criteria for land use and development as outlined in this chapter.
- The County should limit future development in this Plan's Agricultural Preservation District to low intensity residential uses, passive park and recreation uses, and water dependent uses.
- The County should continue to require evidence of all federal, state and local environmental and health permits as a condition of development approval.
- The County should prohibit development within floodways and floodplains which limits natural water storage capacity. Use of floodway fringe areas for recreational, other non-structural uses and open space should be encouraged.
- Performance standards and controls are recommended to permit development design flexibility and to adapt to variable site characteristics. New environmentally sensitive development regulations are needed which recognize and protect natural site functions. Environmentally sensitive features such as wetlands and wildlife habitats should be explicitly protected and buffered from development activities.
- Open space requirement should be put into effect. The extent to which a site can be covered by impervious surfaces should be limited. Requirements should specify minimum areas that must remain undisturbed and available for stormwater infiltration and site vegetation.
- No net change in runoff should be allowed at development sites. Drainage techniques normally channel stormwater runoff away from the structure and off the site. The volume and velocity of stormwater runoff leaving a developed site should be no greater than predevelopment levels, primarily for adjacent property protection and non-source point pollution control.
- Natural vegetation and trees should be preserved during development. Site clear-cutting for development purposes should be expressly prohibited. Mature trees should be protected. If tree removal is unavoidable, replacement standards should be established. Where vegetation is removed, temporary grass seeding should be required for erosion control is the site remains untreated for more than two months.

- There should be zoning incentives to promote cluster development. Cluster development makes wise use of land resources and is environmentally sensitive. The County development ordinances should be updated to provide greater incentives for clustering.
- Slope regulations should be enacted. A steeply sloped site cannot support the same development density as a flat site without severe disturbance. Permitted density should be used only on portions of a site not characterized by steep slopes. Grading activities should be limited in proportion to slope vulnerability.
- Agricultural and forestry (silvicultural) activities should be subject to the institution of recognized best management practices for soil and water conservation.
- The majority of future County development should be directed to designated Development Service Districts where public sewer services are in place or planned. The future use of on-site sewage treatment systems should be limited to those areas where public sewage systems are unavailable. Larger concentration of individual on-site sewage treatment facilities in rural and environmentally sensitive areas should be discouraged through density controls, particularly in areas with soil constraints for septic systems.
- The County should coordinate with state and federal agencies and non-profit conservancy organizations to protect environmentally sensitive lands through acquisition and/or protective easement programs.

Summary

This chapter discusses the characteristics of environmentally sensitive County lands and waters. It describes some of the important reasons for protecting the various natural features which comprise and contribute to the quality of the Essex environment. Recommended actions are stated which should achieve County goals and objectives. Particular focus is accorded to Comprehensive Plan requirements of the recently enacted Chesapeake Bay Preservation Act and Regulations.

All County residents play an important role in the balance of Essex County's environmental system. As the County grows, susceptibility to system imbalance and environmental damage increases. Limits exist to the amount of growth and development that Essex County can absorb without threatening environmental quality and resource supplies. According to the concept of "carrying capacity", Essex County is equipped with a finite supply of natural resources which can support a limited number of people. If its carrying capacity is exceeded, serious environmental degradation can occur, and solutions may be costly. Essex County will probably not reach its threshold for many years, but the influence of present activities on the County's ability to grow and improve must be recognized.

The environmental attributes of Essex County strongly influence quality of life. The condition of the environment must be evaluated in terms of the potential impact upon the daily activities and the standard of living of the community. Environmental resources should be protected on behalf of the economic well-being of the general public with regard to both individual property interests and collective taxpayer investments. The quality of Essex's environment is one of the factors which makes the County such a desirable place to live and work. The intent of County environmental protection measures is not to stop development, but rather to ensure the compatibility of development with the continued productivity and value of environmentally sensitive land and water areas.

APPENDIX A

APPENDIX A

State of Virginia Statutory Authority for this Plan

The preparation, adoption, and implementation of a local comprehensive plan are governed by the Code of Virginia of 1950, as amended. Relevant portions of the Code follow:

Title 15.1
Chapter 11
Article 4

The Comprehensive Plan

§15.1-446-1. Comprehensive plan to be prepared and adopted; scope and purpose.—The local commission shall prepare and recommend a comprehensive plan for the physical development of the territory within its jurisdiction.

Every governing body in this State shall adopt a comprehensive plan for the territory under this jurisdiction by July one, nineteen hundred eighty.

In the preparation of a comprehensive plan the commission shall make careful and comprehensive surveys and studies of the existing conditions and trends of growth, and of the probable future requirements of its territory and inhabitants. The comprehensive plan shall be made with the purpose of guiding and accomplishing a coordinated, adjusted and harmonious development of the area which will, in accordance with present and probable future needs and resources best promote the health, safety, morals, order, convenience, prosperity and general welfare of the inhabitants.

The comprehensive plan shall be general in nature, in that it shall designate the general or approximate location, character, and extent of each feature shown on the plan, and shall indicate where existing lands or facilities are proposed to be extended, widened, removed, relocated, vacated, narrowed, abandoned, or changed in use as the case may be.

Such plan, with the accompanying maps, plats, charts, and descriptive matter, shall show the commission's long-range recommendations for the general development of the territory covered by the plan. It may include, but need not be limited to:

1. The designation of areas for various types of public and private development and use, such as different kinds of residential, commercial, industrial, agricultural, conservation, recreation, public service, flood plain and drainage, and other areas;

2. The designation of a system of transportation facilities such as street, roads, highways, parkways, railways, bridges, viaducts, waterways, airports, ports, terminals, and other like facilities.

3. The designation of a system of community service facilities such as parks, forests, schools, playgrounds, public buildings and institutions, hospitals, community centers, waterworks, sewage disposal or waste disposal areas, and the like; and

4. The designation of historical areas and areas for urban renewal or other treatment.

§15,1-447. Surveys and studies to be made in preparation of plan; implementation of plan.—

1. In the preparation of a comprehensive plan, the local commission shall survey and study such matters as the following:

   a. Use of land, characteristics and conditions of existing development, trends of growth or changes, natural resources, population factors, employment and economic factors, existing public facilities, drainage , flood control and flood damage prevention measures, transportation facilities, and any other matters relating to the subject matter and general purposes of the comprehensive plan.

   b. Probable future population and economic growth of the community, and requirements therefor.

2. The comprehensive plan shall recommend methods of implementation. Unless otherwise required by this chapter these may include but need not be limited to:

   a. An official map;

   b. A capital improvements program;

   c. A subdivision ordinance; and

   d. A zoning ordinance and zoning districts map.

§15.1-4.54. Plan to be reviewed at least once every five years.—At least once every five years, the comprehensive plan shall be reviewed by the local commission to determine whether it is advisable to amend the plan.

§15.1-455. Inclusion of incorporated town in county plan; inclusion of adjacent unincorporated territory in municipal plan.—Any county plan may include planning of incorporated towns to the extent to which, in the county local commission's judgement, provided, however, that the plan shall not be considered as a comprehensive plan for any incorporated town unless recommended by the town commission, if any, and adopted by the governing body of the town.

Any municipal plan may include the planning of adjacent unincorporated territory to the extent to which, in the municipal local commission's judgement, it is related to the planning of the incorporated territory of the municipality; provided, however, that the plan shall not be considered as a comprehensive plan for such unincorporated territory unless recommended by the county local commission, if any, and approved and adopted by the governing body of the county.

§15.1-456. Legal status of plan.—Whenever the local commission shall have recommended a comprehensive plan or part thereof for the county or municipality and such plan shall have been approved and adopted by the governing body, it shall control the general or approximate location, character and extent of each feature shown on the plan. Thereafter no street, park or other public area, public building or public structure, public utility facility or public service corporation facility other than railroad facility, whether publicly or privately owned, shall be constructed, established or authorized, unless and until the general location or approximated location, character, and extent thereof has been submitted to and approved by the local commission as being substantially in accord with the adopted comprehensive plan or part thereof. In connection with any such determination the commission may, and at the direction of the governing body shall, hold a public hearing, after notice as required by §15.1-431.

The commission shall communicate its findings to the governing body, indicating its approval or disapproval with written reasons therefor. The governing body may overrule the action of the commission by a vote of a majority of the membership therefore. Failure of the commission to act within sixty days of such submission, unless such time shall be extended by the governing body, shall be deemed approval.

In the case of approval (sic) the owner or owners or their agents may appeal the decision of the local commission to the governing body within ten days after the decision of the commission. The appeal shall be by written petition to the governing body setting forth the reasons for the appeal. A majority vote of the governing body shall overrule the commission.

Widening, narrowing, extension, enlargement, vacation or change of use of streets, or public areas shall likewise be submitted for approval, but paving, but paving, repair, reconstruction, improvement, drainage or similar work and normal service extensions of public utilities or public serve corporations shall not require approval unless involving a change of location or extent of a street or public area.

§.1-457. Duties of State agencies.—Every department, board, bureau, commission, or other agency of the Commonwealth of Virginia, which is responsible for the construction, operation, or maintenance of any public facility within the territory to be included within a comprehensive plan or any part thereof, or which is responsible for acquiring land for any public purpose, ore disposing of such land, shall, upon the request of the local commission having authority to prepare such plan, furnish reasonable information requested relative to the plans of such agency which may affect the comprehensive plan; and every such agency shall collaborate and cooperate with such commission, when requested, in the preparation of the comprehensive plan to the end that the plan will coordinate the interests and responsibilities of all concerned. Nothing herein shall be deemed, however, to abridge the authority of any such State agency regarding the facilities now or hereafter coming under its jurisdiction.

APPENDIX B

As of January 4, 1990

Essex County Comprehensive Plan

Preliminary Survey Form--October 30, 1989

Dear Neighbor:

The Essex County Planning Commission is currently working on an updated Comprehensive Plan in cooperation with the Middle Peninsula Planning District Commission. The Comprehensive Plan is a vital document which helps to define the characteristics of our community in the short- and long-term future. Public input is a very important aspect of the Comprehensive Plan because it allows for the representation of the concerns of local residents. Therefore, just a few minutes of your time in answering these few simple questions would greatly improve the quality of our Comprehensive Plan. Please understand that you have been selected from a random sample, and all your answers will remain confidential.

Thank you.

1. Economic B Population B

1. Do you consider the current level of economic and population growth in the county to be:

Economic:		Population:	
19	A. Fast	A. 38	Fast
87	B. Appropriate	B. 91	Appropriate
39	C. Slow	C. 14	Slow
8	D. Don't Know	D. 6	Don't Know
153		149	

2. Is it your perception that the transportation routes in the county are:

56	A.	Adequate
90	B.	Inadequate
5	C.	Don't Know
151		

A County B Town Fair

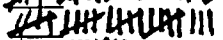
3. Do you feel that the level and quality of public recreational facilities are:

6	A.	Very Appropriate
32	B.	Appropriate
102	C.	Need Improvement
10	D.	Don't Know
150		

4. Do you feel that the number of industries in the county are:

0	A.	Too Many	
66	B.	Appropriate	
84	C.	Too Few	
6	D.	Don't Know	
156			

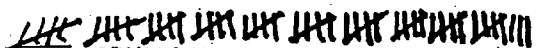
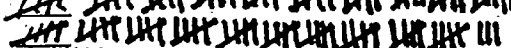
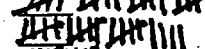
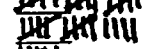
5. Do you consider that the current location of industrial development is:

115	A.	Appropriate	
23	B.	Inappropriate	
12	C.	Don't Know	
150			

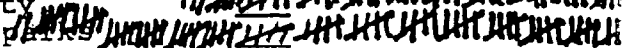
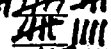
6. Do you consider that the current location of subdivision residential development is:

105	A.	Appropriate	
20	B.	Inappropriate	
22	C.	Don't Know	
147			

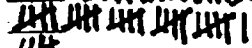
7. Do you feel that the minimum required size of residential lots should be:

53	A.	1/2 acre	
53	B.	1 acre	
19	C.	1 1/2 acres	
14	D.	2 acres	
6	E.	Over 2 acres	
5	F.	Don't Know	
150			

8. Is it your opinion that mobile homes should:

53	A.	Be allowed anywhere in the county	
77	B.	Be allowed only in mobile home parks	
9	C.	Be disallowed everywhere in the county	
9	D.	Don't Know	
148			

9. Do you feel that crime rates in the county are:

16	A.	Too High	
27	B.	High	
69	C.	About Average	
26	D.	Low	
5	E.	Very Low	
4	F.	Don't Know	
147			

10. Water
B

Land
B

10. What is your perception of the environmental conditions in the county?

Water:		Land:	
23	A. Very Good or Excellent	A. 17	Very Good or Excellent
96	B. Good	B. 98	Good
17	C. Inadequate	C. 19	Inadequate
3	D. Very Inadequate	D. 5	Very Inadequate
9	E. Don't Know	E. 8	Don't Know
148	ADEQUATE	147	

11. Do you feel that employment conditions for county residents within the county are:

1	A.	Very Good
26	B.	Good
75	C.	Average
30	D.	Bad
13	E.	Very Bad
5	F.	Don't Know
150		

12. How do you rate the county's school system?

3	A.	Excellent
9	B.	Needs No Improvement
46 TES	C.	Average
53 EIS	D.	Needs Some Improvement
21 EHS	E.	Needs Much Improvement
18	F.	Don't Know
150		

13. Do you think that general public services provided by the county are:

A. Adequate 92 B. Inadequate 30 C. Don't Know 21

County Economic and Residential Growth: (3)

23 ranked #1	23
26 ranked #2	52
14 ranked #3	42
26 ranked #4	104
21 ranked #5	105
23 ranked #6	138
9 ranked #7	63
	527 (5)

Environmental Conditions: (4)

21 ranked #1	21
15 ranked #2	30
16 ranked #3	48
18 ranked #4	372
22 ranked #5	110
31 ranked #6	186
13 ranked #7	51
	518 (4)

Transportation: (6)

11 ranked #1	11
7 ranked #2	14
13 ranked #3	39
27 ranked #4	108
25 ranked #5	125
25 ranked #6	150
30 ranked #7	210
	657 (6)

Employment: (2)

24 ranked #1	24
22 ranked #2	44
24 ranked #3	72
22 ranked #4	368
22 ranked #5	110
13 ranked #6	78
6 ranked #7	42
	458 (2)

Crime: (5)

18 ranked #1	18
26 ranked #2	52
21 ranked #3	63
16 ranked #4	264
21 ranked #5	105
10 ranked #6	60
16 ranked #7	112
	474 (3)

Education: (1)

44 ranked #1	44
32 ranked #2	64
31 ranked #3	93
12 ranked #4	48
4 ranked #5	20
5 ranked #6	30
0 ranked #7	
	299 (1)

Preservation of Agricultural Land: (7)

6 ranked #1	76
5 ranked #2	60
18 ranked #3	54
10 ranked #4	40
15 ranked #5	75
22 ranked #6	132
57 ranked #7	399
	716 (7)

A. Length of residence in County:

1 to 5 years	5 to 15 years	15 years & above
5	34	100

B.

Work inside County	Work outside County
69	48

C. Age:

18 to 35 years	35 to 50 years	50 to 65 years	65 & over
11	38	35	55

D. Sex:

Male	Female
107	35

E. Race:

White	Hispanic	Black	other
119	0	21	1

F. Income:

A. $0 - $10,000 - - - - - 16

B. $10,000 - $20,000 - - 24

C. $20,000 - $30,000 - - 27

D. $30,000 - $40,000 - - 22

E. $40,000 - $50,000 - - 11

F. $50,000 - $60,000 - - 10

G. $60,000 - & above - - 20

G. Number of residents in household:

1 to 3	4 to 6
107	31

APPENDIX B

As of January 4, 1990

Essex County Comprehensive Plan

Preliminary Survey Form--October 30, 1989

Dear Neighbor:

The Essex County Planning Commission is currently working on an updated Comprehensive Plan in cooperation with the Middle Peninsula Planning District Commission. The Comprehensive Plan is a vital document which helps to define the characteristics of our community in the short- and long-term future. Public input is a very important aspect of the Comprehensive Plan because it allows for the representation of the concerns of local residents. Therefore, just a few minutes of your time in answering these few simple questions would greatly improve the quality of our Comprehensive Plan. Please understand that you have been selected from a random sample, and all your answers will remain confidential.

Thank you.

1. Economic B Population B

1. Do you consider the current level of economic and population growth in the county to be:

Economic:		Population:	
19	A. Fast	A. 38	Fast
87	B. Appropriate	B. 91	Appropriate
39	C. Slow	C. 14	Slow
8	D. Don't Know	D. 6	Don't Know
153		149	

2. Is it your perception that the transportation routes in the county are:

56	A.	Adequate
90	B.	Inadequate
5	C.	Don't Know
151		

A County
B Town
Fair

3. Do you feel that the level and quality of public recreational facilities are:

6	A.	Very Appropriate
32	B.	Appropriate
102	C.	Need Improvement
10	D.	Don't Know
150		

4. Do you feel that the number of industries in the county are:

0 A. Too Many
66 B. Appropriate
84 C. Too Few
6 D. Don't Know

156

5. Do you consider that the current location of industrial development is:

115 A. Appropriate
23 B. Inappropriate
12 C. Don't Know

150

6. Do you consider that the current location of subdivision residential development is:

105 A. Appropriate
20 B. Inappropriate
22 C. Don't Know

147

7. Do you feel that the minimum required size of residential lots should be:

53 A. 1/2 acre
53 B. 1 acre
19 C. 1 1/2 acres
14 D. 2 acres
6 E. Over 2 acres
5 F. Don't Know

150

8. Is it your opinion that mobile homes should:

53 A. Be allowed anywhere in the county
77 B. Be allowed only in mobile home parks
9 C. Be disallowed everywhere in the county
9 D. Don't Know

148

9. Do you feel that crime rates in the county are:

16 A. Too High
27 B. High
69 C. About Average
26 D. Low
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B

Land
B

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9	E. Don't Know	E. 8	Don't Know
148		147	

ADEQUATE

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150		

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150			

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0 ranked #7		
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Male	Female
107	35

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119	0	21	1

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B. $10,000 - $20,000 - - 24

C. $20,000 - $30,000 - - 27

D. $30,000 - $40,000 - - 22

E. $40,000 - $50,000 - - 11

F. $50,000 - $60,000 - - 10

G. $60,000 - & above - - 20

G. Number of residents in household:

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